



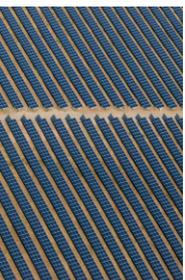
HERBERT  
SMITH  
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# EUROPEAN ENERGY HANDBOOK

A SURVEY OF THE LEGAL  
FRAMEWORK AND CURRENT  
ISSUES IN THE EUROPEAN  
ENERGY SECTOR

LEGAL GUIDE  
TENTH EDITION

2017



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### **Third Energy Package**

Throughout this publication, we refer to the two Directives and three Regulations adopted by the European Council and the Parliament on 13 July 2009 as the "Third Energy Package". For ease of reference, the Directives and Regulations adopted as part of the Third Energy Package: EU Directives 2009/72/EC, 2009/73/EC and Regulations (EC) No 713/2009, No 714/2009 and No 715/2009 are referred to as the "Third Electricity Directive", the "Third Gas Directive", the "ACER Regulation", the "Electricity Regulation" and the "Gas Regulation", respectively. Where the context so requires, we refer collectively to the two Directives as the "Third Electricity and Gas Directives" and to the Regulations as the "Electricity and Gas Regulations", as appropriate.

### **Climate Change Package**

We refer to the four Directives, one Regulation and one Decision adopted by the European Parliament on 17 December 2008 and the European Council on 6 April 2009 as the "Climate Change Package". For ease of reference, throughout this publication, we refer to EU Directives 2009/29/EC, 2009/28/EC, 2009/31/EC and 2009/30/EC as the "New EU ETS Directive", the "Renewable Energy Directive", the "CCS Directive" and the "Biofuel Directive" respectively. Further, we refer to EU Decision No 406/2009/EC and Regulation (EC) No 443/2009 as the "GHG Reduction Decision" and the "Emissions Standards Regulation", respectively.

Where required, we have referred to the previous internal energy market directives 1996/92/EC and 1998/30/EC as the "First Electricity Directive" and the "First Gas Directive", respectively and to Directives 2003/54/EC and 2003/55/EC as the "Second Electricity Directive" and the "Second Gas Directive", respectively.

Throughout the publication, we refer to Transmission System Operators as "TSO" and to Distribution System Operators as "DSO".

We use the following abbreviations for the various unbundling models:

FOU: Full Ownership Unbundling

ITO: Independent Transport Operator

ISO: Independent System Operator

### **Legal advice**

Please note that the content of this publication does not constitute legal advice and should not be relied on as such. Specific advice should be sought about your specific circumstances. The deadline for the submission of chapters was 31 March 2017.

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# Energy law in the European Union

## Recent developments in the European Union energy market

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The past couple of years have seen a host of energy-related initiatives by the European Union focussing on delivering a low carbon future, energy security and the governance of the Energy Union.

This article will present the most important developments and initiatives over the 2016- 2017 period with an initial overview of stand-alone initiatives, before analysing the Clean Energy Package released by the European Commission in November 2016, which has since dominated the debate of the future direction of the Energy Union and in particular the design of the European electricity market.

### Action against aviation emissions

In February 2017, the European Commission announced its plans to amend the EU Emissions Trading System (the "EU ETS") so as to include CO<sub>2</sub> emissions from aviation within its scope following an agreement by the International Civil Aviation Organisation ("ICAO") to stabilise international aviation emissions. Pursuant to the plans, airlines will be required to monitor and report their annual CO<sub>2</sub> emissions on international routes and offset those emissions which exceed 2020 levels. The European Commission is proposing to continue with the current geographic scope of the EU ETS for aviation, covering flights between airports in the European Economic Area. It is intended that the relevant proposals will go through the co-decision process by the end of 2017.

### Support for sustainable transport and energy infrastructure

In April 2017, Member States approved a European Commission package of €22.1 million to assist with the development of sustainable and efficient transport and energy infrastructure in the framework of the Connecting Europe Facility ("CEF"). The proposed action points include 'multimodal transport modes' with emphasis on the gas sector and smart grids.

### Clean Energy for EU Islands

In May 2017, the European Commission, together with 14 Member States (Croatia, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Malta, Portugal, Spain, and Sweden) signed a political declaration to launch the new 'Clean Energy for EU Islands' initiative.

The initiative was originally announced as part of the Commission's 'Clean Energy for All Europeans' package of proposals in November 2016 and is aimed at accelerating the clean energy transition on Europe's more than 2700 islands.

### Agreement reached on new Security of Gas Supply Regulation

In April 2017, European Parliament and the Council reached a political agreement on the new security of gas supply regulation which aims at preventing gas supply crises. The provisions of the new regulation include:

- a solidarity principle between Member States pursuant to which neighbouring Member States will be under a duty to assist each other so that gas supply to households and essential social services are maintained.
- a duty for natural gas companies to notify long-term contracts that are relevant for supply (28% of the annual gas consumption in the relevant Member State).
- a regional solidarity mechanism pursuant to which regional groups facilitate the joint assessment of common security of supply risks and the development of an agreement on joint preventive and emergency measures.

Following formal approval by the European Parliament and the Council, the revised Security of Gas Supply Regulation will be published in the EU Official Journal and will enter into force 20 days after publication.

### Intergovernmental Agreements

In March 2017, the European legislators agreed new rules in relation to intergovernmental agreements ("IGAs") in the field of energy that EU countries sign with non-EU countries.

The new rules require Member State to submit their intended IGAs with non-EU countries in the gas and oil sectors to the Commission prior to their signature in order to enable the Commission to verify that the relevant IGAs comply with EU law. IGAs in the electricity sector will also have to be submitted to the Commission, but only after signing, as is the case currently.

### The Clean Energy Package

On 30 November 2016 the European Commission released a package of legislative initiatives aimed at the decarbonisation and further integration of European energy markets. Originally termed the "Winter Package", it is now generally referred to as the "Clean Energy for All Europeans" Package or the "Clean Energy Package" ("CEP").

Broadly, the policy focus of the CEP is on three key areas: (i) energy efficiency; (ii) creating a global leadership role for the EU in relation to the development and deployment of renewable technology; and (iii) creating a fair deal for consumers.

The legislative focus of the CEP is on five key areas:

- energy efficiency;
- recasting the renewable energy legislation;
- the design of the electricity markets;
- security of electricity supply; and
- new governance rules for the energy union for which the CEP is the main legislative vehicle.

These in turn have been cast into a suite of more than 40 planned measures which were first – at least conceptually – announced in February 2015.

Similarly to the 2009 Climate Change Package and the Third Energy Package, although on a larger scale, the CEP contains a veritable plethora of communications, impact assessments, fact sheets, and memos on various aspects of the issues covered in the legislative proposals, including:

- a proposal for a recast of the Internal Electricity Market Directive;
- a proposal for a recast of the Internal Electricity Market Regulation;
- a proposal for a recast of the ACER Regulation;
- a proposal for a Regulation on Risk-Preparedness in the Electricity Sector and Repealing the Security of Supply Directive;
- a proposal for a recast of the Renewable Energy Directive;
- a proposal for a revised Energy Efficiency Directive;
- a proposal for a revised Energy Performance of Buildings Directive; and
- Proposal for a Regulation on the Governance of the Energy Union.

### Recasting of the RES Directive

The recasting of the Renewable Energy Directive is a key element of the CEP and seeks to strengthen six key areas for action that have been deemed strategic for the clean energy goals of the European Union:

- a framework furthering support to the deployment of renewable energy in the European Union;
- mainstreaming renewables in the Heating and Cooling Sector;
- decarbonisation of the Transport Sector and the development of renewable and low carbon fuels (including bio fuels and advanced biofuels);
- consumer empowerment;
- a reform of the sustainability criteria for biofuels; and
- ensuring that the EU meets its targets in a cost effective way .

The changes that are proposed allow for the developments in the renewable sector that have brought the technology cost down while also promoting investment and technology diversification in the energy mix. Furthermore, the changes seek to lessen the administrative burden faced by such projects and reinforce local acceptance of projects through the creation of a one-stop-shop and a time limit for granting Renewable Energy

Sources permits and simplifying the notification procedure for repowering existing plants and small scale projects.

From an RES perspective, the CEP contains a number of changes:

- A Union-wide minimum target of 27% share of renewable energy in gross final consumption by 2030. Member States have to reach a minimum national share of renewable energy in gross final consumption of between 10% and 49%. If a Member State fails to reach its targets, payments must be made into a fund used to launch competitive bidding procedures for renewable projects. Member States will be allowed to statistically transfer amounts of renewable energy among themselves.
- General rules on support mechanisms: rather than giving detailed prerequisites for support mechanisms and a clear tendency towards tendering mechanisms, the Proposal requires quite generally that support will be designed as to integrate renewables in the electricity market and should be granted in an open, transparent, competitive, non-discriminatory and cost-effective manner.
- A new provision on the stability of financial support ensures that the level of and conditions attached to the support of renewable energy projects are not altered in a way that negatively impacts the rights conferred or the economics of supported projects.
- Member States must enhance predictability for investors by defining and publishing a long-term schedule in relation to the expected allocation of support, covering at least the next three years.
- Streamlined permitting process: by 1 January 2021, single administration contact points must be set up to co-ordinate the entire permit granting process and guide applicants through the application process.
- Permit granting procedures should not last longer than three years, or one year in the case of an application to repower an existing installation. Demonstration projects, installations smaller than 50kW and certain repowering projects will only be subject to a notification.
- Support schemes must be open to projects from other Member States for at least 10% of the newly-supported capacity between 2021 and 2025, and 15% between 2026 and 2030. Member States can either set up joint support schemes or open their respective support schemes through co-operation agreements. Energy produced will in principle count towards the funding of Member State's renewable targets. Interesting given LEC issues in the UK.

### Mainstreaming renewables in the Heating and Cooling Sector

The proposals of the CEP in this heating and cooling sector aim to accelerate the slow uptake of renewables in an area that accounts for 50% of the total energy demand for Europe. The dependence on fossil generation for the heating and cooling sector not only adversely affects the clean energy objectives, but it is also seen as compromising energy security by creating dependence on imported energy sources.

To address this, the revision of the Renewable Energy Directive seeks to give more uptake options to Member States and open

access to local district heating and cooling systems to renewable generators. The stated goal is that Member States achieve a 1% annual increase in the share of renewable energy in the heating and cooling sector.

Consumers that are connected to a district heating or cooling system not meeting the efficiency criteria of Directive 2012/27/EU will be allowed to produce heating or cooling from renewable energy sources themselves.

### Decarbonisation of the Transport Sector

This element of the proposed recast of the RES Directive seeks to address the fossil fuel dependence of the Transport Sector. It seeks to do this by imposing an obligation on European transport fuel suppliers to increase the provision of renewable and low carbon fuels (including bio fuels and advanced biofuels). To address the issues that are inherent with land use for biofuels as opposed to food production, the Directive also imposes a cap on the contribution of food based biofuels to the energy objective. The cap starts at 7% of fuels by 2021 and reduces to 3.8% by 2030. In conjunction with this the directive introduces national databases so that the origins of the fuels can be traced and fraud prevented.

### Consumer empowerment

The revision of the RES Directive in relation to this seeks both to encourage microgeneration (by householders and local communities) as well as encouraging consumers to alter their behaviours in a way that supports energy efficiency (for example by engaging with smart grids). The revisions seek to achieve this objective by: (i) allowing consumers to consume their own generation and, where they have excess capacity, sell into the grid; (ii) recognises community energy projects and their participation in the market; (iii) ensure the provision of information on the performance and energy sources of district heating and cooling systems; and (iv) improving the Guarantees of Origin System which will continue to be issued for RES generation. To the extent that the relevant RES output enjoys the support of a RES support scheme, the relevant guarantees of origin will be directly transferred to the market by auctioning, in order to offset the cost of the renewables support.

Overall these amendments show that the role of the consumer is seen as reinforcing the energy objectives by providing them with the information and financial incentive to participate in the clean energy market.

### Reform of the sustainability criteria for biofuels

These proposed amendments to the Directive to address biofuels used for electricity generation, namely in the form of biomass and biogas. These reforms mirror those set out in relation to the use of biofuels as part of the decarbonisation of the Transport sector (see above). The Directive now expressly recognises the low carbon benefits of biomass in comparison to fossil fuels, and reinforces the applicable fuel sustainability criteria as well as introducing new requirements designed to maximise the energy efficiency of this form of consumptive generation. The four key reforms in the CEP are: (i) introduction of the requirement that new advanced biofuels emit 70% fewer GHG than like fossil generation; (ii) protection to ensure the

sustainability of wood fuel used for electricity generation; (iii) expansion of the sustainability criteria are extended to cover solid biomass and biogas used in large heat and power plants (above 20/MW fuel capacity); and (iv) large-scale biomass electricity plants (above 20/MW) that are not already operating and participating in a support mechanism will need to use high efficient combined heat and power technology (reaching efficiencies above 80%).

### Energy efficiency

Improved energy efficiency in the EU is another fundamental pillar of the EU's Europe 2020 Strategy for smart, sustainable and inclusive growth and the transition to a resource efficient economy. The European Council's original target of at least 27% energy efficiency has been increased to 30% energy efficiency by 2030 through the amendments to Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (the "Energy Efficiency Directive") included in the CEP.

To reclaim the target, the Commission seeks to increase finance instruments to facilitate increased investment in energy efficiency in relation to building renovation across Europe, including retrofitting existing buildings making them more energy efficient, and making full use of sustainable space heating and cooling which will reduce the EU's energy costs. Significantly, in April 2016 the Vice-President for Energy Union Maroš Šefčovič indicated that the European Commission would present a new Smart Financing for Smart Building initiative in the autumn, alongside revisions to the Energy Efficiency Directive and began pushing for new public financing instruments to generate a wave of building renovation in Europe during his Energy Union tour in 2015. The EU budget for 2014-2020 significantly increased the contribution to building and renovation. Furthermore, in February 2016 the Commission released a proposal of a Heating and Cooling strategy to move towards a smarter, more efficient and sustainable heating and cooling sector.

The Energy Efficiency Directive establishes a common framework of measures for the promotion of energy efficiency within the Union in order to ensure the achievement of the Union's 2020 20% headline target on energy efficiency and to pave the way for further energy efficiency improvements beyond that date. It lays down rules designed to remove barriers in the energy market and overcome market failures that impede efficiency in the supply and use of energy, and provides for the establishment of indicative national energy efficiency targets for 2020.

The Energy Efficiency Directive requires Member States to set indicative energy efficiency targets that take into account the EU's 2020 energy consumption targets. Articles 24(1) and 24(2) of the Energy Efficiency Directive require Member States to issue reports on progress made towards achieving national energy efficiency targets and National Energy Efficiency Action Plans. As required in Article 24(11), the Commission then makes the reports publicly available.

The CEP also looks to promote energy efficiency reforms in addition to those that are directly applicable to the Energy Efficiency Directive. Such reforms include amending the Energy Performance in Buildings Directive, developing the

Eco-design and Energy Labelling project and using the European Fund for Strategic Investments in addition to the Regional Development Fund and Cohesion Fund to finance targeted energy efficiency projects.

### New electricity market design

As part of the CEP, the Commission is seeking to adapt the electricity market rule to encourage greater consumer participation and allow for the effects of new technology. The Commission notes that from a technical perspective, increased amounts of renewable intermittent generation in the energy mix poses new challenges and requires rules that are flexible and ensure energy security.

These challenges are faced by both the wholesale and the retail markets. The belief is that though the wholesale markets are showing more cross-border trade, Member States are resorting to purely national assessments and strategies to minimise risks to security of supply without taking account of the impact on neighbouring countries. As a result of this, the electricity wholesale market is underperforming. In relation to the retail market, the Commission believes that there are issues with low levels of consumer participation in relation to managing their energy usage despite the introduction of new technologies, such as smart homes and smart grids that are designed to facilitate this. As a result the Commission is seeking to encourage change by incentivising consumer behaviours.

### Capacity markets

On the same day as the release of the CEP, the European Commission published the final report of its capacity mechanism sector inquiry. A central conclusion was that Member States need to better assess the need for such mechanisms and gives guidance on how to make their design deliver on security of supply while minimising the competition distortions. The report finds that Member States have often failed to adequately assess the need for a capacity mechanism before introducing one and that many Member States have yet to implement market reforms that are indispensable to deliver on security of supply issues. Further, where a capacity mechanism is necessary, the report gives practical guidance to Member States on which types of capacity mechanisms may be most suitable to solve the problem identified.

As an immediate consequence of the Commission's sector inquiry into national capacity markets, the CEP proposes new rules for capacity mechanisms: Pursuant to the draft proposal, Member States wishing to adopt a capacity mechanism in their jurisdiction must consult on its proposed mechanism "at least with its electrically connected neighbouring member states".

Perhaps most importantly, the proposed rules impose an emissions limit on what can receive payments under capacity mechanisms. New capacity is only eligible if it emits less than 550 grams of CO<sub>2</sub> per kilowatt hour (CO<sub>2</sub>/kWh), although existing plants are initially exempt from this rule. This all but rules out new coal plants from getting paid through capacity mechanisms. Five years after the regulation has entered into force, this limit applies to all plants participating in a capacity mechanism.

Maroš Šefčovič, vice-president of the Commission and in charge of the Energy Union, emphasised the "high environmental standards" of the new capacity mechanism arrangements. However, NGOs pointed out that it left loopholes for subsidising existing coal plants, as according to the proposal ca 95% of coal power plants would be eligible to receive capacity payments until 2026.

### New rules for the wholesale market

The main objectives for the new wholesale market rules as proposed by the CEP can be summarised as follows:

- Increasing the flexibility and responsiveness of the short term markets to accommodate the challenges posed by intermittent renewable generation.
- Incentivising investment in flexible assets by the removal of wholesale price caps to ensure that prices reflect the real electricity value in relation to time and location and therefore incentivising investment to make the most of these distortions. Note that this approach may contain an inherent contradiction in that by encouraging investors to create generation capacity to take advantage of these inefficient islands they simultaneously get rid of the very inefficiencies that they are seeking to take advantage of.
- The biggest change from an RES perspective is the removal of the rules on priority grid access for renewables. The CEP states that dispatch rules will be adapted to the new market reality to create a level-playing field for larger generation capacities. Rules on priority dispatch will, however, be maintained for small-scale renewable installations and emerging technologies to ensure their development. Producers of electricity from RES or high-efficiency cogeneration will only be subject to downward non-market based re-dispatching or curtailment if no other alternative exists and subject to financial compensation by the system operator requesting the curtailment or re-dispatching.
- Enabling the reinvestment of congestion revenues to minimise grid bottlenecks on the borders.
- Greater co-ordination of TSOs at a regional level to ensure better management of the grid.
- Optimising demand participation by ensuring that the remuneration for demand side response will be more in line with the flexibility of those services.

### New rules for the retail market

The focus to the amendments to the retail markets are designed to engender greater consumer participation in the energy markets, the main elements of which can be described as follows:

- Giving the consumer greater information about their consumption and the associated costs including report energy costs, network charges and taxes.
- Giving all consumers access to one minimum standard comparison tool so that they can keep abreast of different offers.
- Introduction of caps on both termination fees and the duration of retail plans to allow consumers to switch suppliers more easily.

- Entitling all consumers to use smart meters as well as requiring Member States not planning to roll-out smart meters to assess the cost-effectiveness of a large-scale smart metering deployment on a regular basis.
- Encouraging consumers and communities to participate in the electricity market through self-generation and allowing the sale of excess capacity onto the grid.
- Enabling every consumer to offer demand-side response through aggregators.
- Creation of dynamic electricity price contracts to allow consumers to take advantage of price fluctuations in addition to the introduction of transitional provisions to protect vulnerable consumers from these changes.
- Creation of a framework to allow Member States to incentivise DSOs to improve efficiency.
- Creation of a new EU DSO responsible for putting in place rules on grid management and use and EU-level cooperation with TSOs.

### New Energy Union governance

To catalyse and monitor the progress of the sectors in achieving the clean energy goals as set out in the CEP, the Commission has introduced new regulations focused on Energy Union governance.

This is considered necessary as part of the creation of a fully integrated European Energy Market as, in addition to monitoring the Member States' progress towards the 30% targets, it, along with measures such as a new European Distribution System Operator ("DSO"), provides a legislative platform to act as a step away from energy islands towards a single European Energy Market by increasing coordination between the Member States.

The immediate effect of the proposed regulation will be to lessen the administrative burden on the Member States by streamlining the planning and reporting obligations. In the medium-term the monitoring function that the rules have will be used by the Commission not only to assess Member States' progress towards the 2030 goals, but also to deploy strategic assistance where it looks like a given Member State is not going to meet its contributions.

### Outlook

It has been estimated that the CEP proposals will not be adopted before 2018/2019.

The CEP has to be seen in the context of the successes and failures of the 2009 Climate Change Package, which was the EU's first attempt to create a comprehensive European legal regime covering the carbon and renewable energy sectors. The Package influenced investment decisions by securing a future for carbon trading and laying the foundations for future investment in renewable technologies, biofuel and the development of carbon capture and storage. Critically, the 2009 RES Directive did not consider the impact of support regimes for intermittent RES on the overall electricity market and the technical demands RES would place on grids.

The CEP is the first attempt of considering the impact of RES on the electricity market "on the whole". Whilst Maroš Šefčovič, the Commissioner for Energy Union, has hailed the CEP as the "the biggest transformation of Europe's energy system since the building of its centralised energy system", the CEP is rather a further stepping stone towards the overarching goal of a truly integrated European energy market. By way of example, the CEP contains little in the way of cross border support schemes and the proposed reforms of the electricity market design seem to merely address previous oversights rather than expressing a grand vision for the energy market of the future.

Further concern regarding the CEP relates to the proposal to revoke priority grid access for RES. Were this to be adopted, renewable power would come to be treated in the same way as conventionally generated electricity in terms of dispatching rules and order. The concern is that this might have an impact on merit order and be an incentive for system operators to disconnect RES facilities as 'easy targets' should load shedding be required. This is on the basis that if the grid is too congested at a given moment, then the flexibility of RES makes them vulnerable to be the first to be curtailed.

All in all, it is unlikely that the CEP will be the last of the European energy packages, but it represents a significant milestone.

# Overview of the legal and regulatory framework in the European Union

## Introduction and scope

The European Union legislative landscape in the energy sector (and beyond) has continued to undergo considerable changes in the past few years.

In February 2015, the European Commission adopted the Energy Union Package consisting of "A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy". The publication of this strategy has created new momentum to bring about the transition to a low-carbon, secure and competitive Energy Union. In doing so, the Commission's Framework Strategy promises to accelerate the integration of European energy markets creating more competition, leading to greater market efficiency through the better use of energy generation facilities across the EU to produce more affordable prices for consumers. Accordingly, Member States will increasingly pool their power and infrastructure resources, working in solidarity to deliver secure energy to their citizens.

The current climate of low oil and gas prices together with the falling cost of renewable energy, the emergence of new technologies and stronger EU climate policy, has created an opportune moment to reset the EU's energy policy in the direction of a functional Energy Union and to move away from a fragmented system characterised by uncoordinated national policies, market barriers and energy-isolated areas. The Energy Union Package sets out the principle goals of the Energy Union in five interrelated strategic policy dimensions, as well as the steps to achieve them:

### Energy security

In recognition of the need to diversify Europe's supply of gas, the Commission pledged to work with Member States to develop access to alternative suppliers, including from the Southern Corridor route, the Mediterranean EU Member States and North African countries. This strategy will decrease dependence on individual suppliers, and includes a focus on exploring the full potential of LNG (including as a backup in cases of insufficient gas supplies from Europe). Accordingly, in February 2016 the Commission launched the Sustainable Energy Security Package, including a comprehensive strategy for LNG and its storage.

The Energy Security Package also contains a proposal for a revision of the decision on intergovernmental agreements, incorporating obligatory ex ante assessments of IGAs by the Commission. The Commission's oversight will enable Member States to avoid difficult renegotiation processes ex post, and facilitate the development of standard contract clauses covering EU rules, allowing for more adequate compliance with EU law.

### A fully-integrated internal energy market

In order to facilitate the integration of Europe's electricity and gas transmission systems, the EU Commission has pledged to propose a new European electricity market design followed by legislative proposals and reinforcement of the European regulatory framework to harmonise the flow of electricity and gas across different transmission systems. This has materialised in the adoption of Commission Regulation (EU) 2015/1222 of July 2015 (the "Regulation on Market Coupling") which made market coupling for electricity trading legally binding across the EU.

This regulation works in tandem with the European network codes designed to integrate electricity and gas systems across the EU. More specifically, the Network Code on Capacity Allocation and Congestion Management (NC CACM) effectively puts in place the legislative framework to allow for the market coupling process across the EU (allowing bids and offers from national power exchanges for cross-border trading to be brought together and matched in an optimal manner across borders). It is estimated to save customers about €2.5 to €4 billion a year.

The framework strategy recognises the importance of interconnectors allowing energy to flow freely across the EU, with the minimum interconnection for electricity set at ten percent of installed electricity production capacity of Member States by 2020. This is being addressed through the PCI scheme (as defined below) which provides access to finance for the development of infrastructure projects essential to better connect energy markets. Access to finance is also provided by the European Investment Bank, the Connecting Europe Facility, the European Structural and Investment Funds and the European Fund for Strategic. The transition towards a more secure, sustainable and integrated Energy Union is estimated to require investment of approximately €200 billion annually for the next year. The Commission will explore proposals for further energy investment regimes that pool resources to finance economically viable investments.

### Energy efficiency

The European Council has set a target of at least 27% energy efficiency savings in 2030, which will be reviewed in 2020 with the aim of adjusting it upwards to an EU level of 30%. In pursuit of this goal, the Commission seeks to increase finance instruments to facilitate increased investment in energy efficiency in relation to building renovation across Europe, including retrofitting existing buildings making them more energy efficient, and making full use of sustainable space heating and cooling will reduce the EU's energy costs. Significantly, in April 2016 the Vice-President for Energy Union Maroš Šefčovič indicated that the European Commission would

present a new Smart Financing for Smart Building initiative in the autumn, alongside revisions to the Energy Efficiency Directive and began pushing for new public financing instruments to generate a wave of building renovation in Europe during his Energy Union tour in 2015. The EU budget for 2014-2020 significantly increased the contribution to building and renovation. Furthermore, in February 2016 the Commissions released a proposal of a Heating and Cooling strategy to move towards a smarter, more efficient and sustainable heating and cooling sector.

### Climate Action – emission reduction

The EU aims to decrease domestic greenhouse gas emissions (GHG) by at least 40% compared to 1990 levels by 2030 (as reiterated under the EU INDC pursuant to the Paris Agreement), with the EU European Trade System playing a significant role as an EU-wide driver for low-carbon investments. Additionally, the Commission will propose a new Renewable Energy package in 2016-2017, including a new policy for sustainable biomass and biofuels as well as legislation to ensure that the 2030 target is met cost-effectively.

The Strategy Framework also focuses on the decarbonisation of the EU's transport sector, the significance of which is emphasised by recent data indicating that 94% of the EU transport sector relies on oil products of which 90% is imported. Although there was a Directive on Alternative Fuels (transport decarbonisation) 2014/94/EU adopted in 2014, under the more recent Energy Union Package the Commission has pledged to take action to facilitate an increase in the deployment of alternative fuels and procurement of clean vehicles. The Commission also stated that it would propose a comprehensive road transport package promoting more efficient pricing of infrastructure and the roll-out of intelligent transport solutions. Since this time

### Research and innovation

In order to maintain European technological leadership and expand export opportunities the EU will develop a forward-looking energy and climate related R&I strategy. Accordingly, the Commission pledged to propose a European energy R&I approach comprising an upgraded Strategic Energy Technology Plan and strategic transport R&I agenda. The Commission is also set to develop an initiative on global technology and innovation leadership on energy and climate to boost jobs and growth.

This article analyses these changes, the relevant European directives and regulations and their effects at European level. For a detailed analysis of how the European Legislation impacts on EU Member States and beyond, please turn to the national chapters in this edition of EEH – the European Handbook 2017.

## A. The Third Energy Package:

### A.1 The policy context: from sector inquiry to Third Energy Package

In 2005, the European Commission undertook an inquiry into competition in gas and electricity markets (the "Sector Inquiry") as provided under Article 17 of Regulation 1/2003<sup>1</sup> on the implementation of the EC Treaty rules on competition, aimed at assessing the prevailing competitive conditions and establishing the causes of the perceived market malfunctioning.

Following the Sector Inquiry, the European Commission published a proposal for the TEP which was finally adopted on 13 July 2009 and entered into force on 4 September 2009. Member States had until March 2011 to transpose the majority of the provisions in the Third Electricity and Gas Directives into national law, the exception being the "third country clause" which needed to be transposed by March 2013.

The Third Gas and Electricity Regulations and ACER Regulation entered into force as of September 2009. However, in order to avoid a discrepancy between the exemption regime for new infrastructure in the gas sector, which is contained in the Third Gas Directive and the corresponding regime in the electricity sector which is contained in the New Electricity Regulation, the latter was applied as of 3 March 2011. Likewise, Articles 5 to 11 of the ACER Regulation, which deal with detailed tasks of ACER, were only applied from that date.

The TEP contains three Regulations and two Directives.

- Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC (the "Third Electricity Directive");<sup>2</sup>
- Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/ECA Gas Directive amending and completing the existing Gas Directive 2003/55 (the "Third Gas Directive");<sup>3</sup>
- Regulation (EC) No 713/2009 of the European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators (the "ACER Regulation");<sup>4</sup>
- Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003 (the "New Electricity Regulation");<sup>5</sup> and
- Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005 1775/05 (the "New Gas Regulation").<sup>6</sup>

For an analysis as to how individual aspects of the TEP impact the regulatory regime of a specific jurisdiction, please refer to the relevant national chapter in this edition of EEH – the European Handbook 2017.

### A.2 The unbundling regime<sup>7</sup>

For the purposes of the Third Electricity and Third Gas Directives the "unbundling" regime is of central importance. In the context of the TEP, unbundling means the separation of the operation of gas pipelines and electricity networks at transmission level from the business of producing or supplying either gas or electricity.<sup>8</sup>

Under the TEP there are three main unbundling options which, under certain circumstances, the Member States may select. The options are:

- the full ownership unbundling model;

- the independent system operator ("ISO") model; or
- the independent transmission operator ("ITO") model.

Additionally Article 9(9) of the Third Gas and Third Electricity Directives, respectively, contain details of an unbundling model that is not entirely congruent with the above unbundling modes but is deemed to be as efficient. This is the case in Scotland where the transmission networks are owned by Scottish Power Transmission Limited ("SPTL") for southern Scotland and Scottish Hydro-Electric Transmission Limited ("SHETL") for northern Scotland, the two Scottish transmission companies, but are operated by the National Grid. The current model in place in Scotland does not comply with the full requirements of the ISO model but is considered to be sufficient to ensure the independence of the transmission system operator<sup>9</sup>.

The full ownership unbundling model requires the full separation of the operation of gas and electricity transportation/transmission networks and those activities related to production, generation and supply. The ownership unbundling model also puts in place new restrictions in respect of ownership. The operators of gas and electricity transmission networks are no longer permitted to be part of (or affiliated to) a corporate group which is also active in supply, generation or production. The operator of the network will also be obliged to own and control the entire network.

The ownership unbundling model does not however prevent, in certain circumstances, a person or a company from holding shares in both a network operator and an entity involved in production/supply activities provided that the shares constitute a non-controlling minority interest. Such interest must not have any voting rights or other rights of veto in the entities concerned and must not have rights to appoint members of either of the entities' boards of directors. In particular no person may be a member of the board of directors of the network operator and of a supply/production undertaking which may be particularly relevant to non-sector investors (eg, pension funds).

On 8 May 2013 the Commission released a working document setting out the Commission's practice in assessing the presence of a conflict of interest for ownership unbundling including in the case of financial investors in the context of the certification procedure for TSOs.<sup>10</sup> This working document is not legally binding but makes clear that in the context of TSO certification, a complete file will need to be provided and a case-by-case assessment made. Relevant elements will include the following:

- geographic location of the transmission activities and the generation, production and supply activities concerned;
- the value and nature of the participations in these activities;
- the size and market share of the generation, production and/or supply activities;
- whether the wholesale price evolution of the commodity would have consequences for the emergence of a conflict of interest; and
- access to confidential information.

Under the ISO model<sup>11</sup> the network must be managed by an identified ISO (which must perform all the functions of a network operator) although it is permitted for vertically

integrated companies to maintain ownership of their network assets<sup>12</sup>. The ISO model requires the ISO to comply with the same unbundling requirements as other network operators and for it to be a completely separate undertaking from the vertically integrated company.<sup>13</sup> On this basis, the ISO cannot have a shareholding in any supply or production entities.

There are also several additional regulatory provisions to reinforce the ISO model which are set out in the TEP. A network owner active in supply or supply and production is required to legally and functionally unbundle<sup>14</sup> the part of the company with ownership of the network and will be required to finance<sup>15</sup> any investment decisions made by the ISO. The Commission (with assistance from the Agency for the Co-operation of Energy Regulators ("ACER")) will approve<sup>16</sup> the identity of the ISO and, once the ISO has been appointed, it has to commit to a ten year network investment plan<sup>17</sup> arranged by the regulatory authority.

A third option was introduced as a compromise after eight Member States noted that the full ownership unbundling model and the ISO model were incompatible with their national regulatory regimes. This is known as the ITO model. The ITO model can be best described as a "status-quo-plus" model because it permits some Member States such as France, Austria and Germany to keep in place their current structures where the TSOs belong to a vertically integrated undertaking. The model requires such undertakings to comply with additional regulations to ensure the independence of each such activity. These rules include:

- preventing the TSOs' management from having particular positions of responsibility,<sup>18</sup> interests or business relationships, directly or indirectly, with the relevant vertically integrated undertaking. This rule should be applicable for three years prior to their appointment to the majority of the TSO management;
- placing a minimum period of six months<sup>19</sup> prior to the appointment of a person to the remainder of the management team of the TSO during which that person may not hold any management position or exercise any other relevant activity in the vertically integrated undertaking. The rules are intended to encourage the relevant national regulator to vet the executive management;
- examining network development and investment decisions<sup>20</sup> taken by an ITO to ensure they are consistent with relevant Community-wide plans;
- working against discriminatory behaviour<sup>21</sup> by the ITO (and on the influence exerted by the relevant vertically integrated undertaking), and restricting the ITO's access to the capital market, to be overseen by a supervisory body; and
- enforcing compliance with the ITO provisions.<sup>22</sup> Penalties, depending on the breach, are defined in respect of the turnover of the ITO or of its relevant parent company. The ultimate penalty for a persistently non-compliant ITO model would be the mandatory introduction and designation of an ISO.

Pursuant to the Third Electricity and Gas Directives, the Commission was to conduct a specific review of provisions in place using, as a benchmark, effective and efficient unbundling. In October 2014, this report was published.<sup>23</sup> Its main findings are that there were 26 certified ITOs in 10 EU Member States (Austria, Czech Republic, France, Germany, Greece, Hungary,

Ireland, Italy, Slovakia and Slovenia) the majority of which are operating in the gas sector (21), while only five ITOs are active in the electricity sector. In addition, a certification of one TSO under the ITO model was rejected in 2013, while another TSO decided to withdraw its application for the ITO certification. Moreover, there is a limited number of remaining TSOs which are likely to be certified as ITOs but for which a certification process at European level has not started yet. The findings of the Commission's report are of a preliminary nature given that the implementation of the ITO-model is in its early days as ITOs, like other TSOs, have been certified only since 2012 and have been operating under the new rules for a very short period of time. The Commission believes that it is therefore too early to draw definite conclusions on the functioning of the model and the actual independence of the ITOs in practice.

Whilst the ITO model so far appears to function well in practice, the Commission has suggested that it may be further improved, for instance, by strengthening the independence of the Supervisory Board, specifying the scope of the Compliance Programmes and developing common guidance and a network of cooperation for Compliance Officers, as well as harmonising the timeframe for network development plans at national and European level. Therefore, the Commission will continue to monitor the implementation and effectiveness of the unbundling requirements under the Third Energy Package and continue to ensure that ITOs and VIUs comply with the EU competition rules.

The ITO model only applies<sup>24</sup> in the Member States where TSOs continue to be part of a vertically integrated undertaking. Any Member States that have already implemented the ISO or full ownership unbundling model will not be able to revert to an ITO model. As a result the ITO model continues to be the minimum level that will be required to constitute effective network unbundling across the EU.

### A.3 The third country clause

The TEP provides that national regulatory authorities ("NRAs") need to certify any TSO as compliant with the unbundling regime before the relevant TSO is allowed to take up their function as TSOs.<sup>25</sup>

In addition, under the so called third country clause,<sup>26</sup> national regulators are required to refuse certification of a TSO if the relevant company does not comply with the unbundling requirements, and its market entry would jeopardise the Member State's or the EU's security of supply. In addition, national regulators must notify the European Commission if:

- a transmission system owner or operator that is controlled by a party from a non-EU country applies for certification; or
- any circumstances arise which would result in a party from a non-EU country obtaining control of a transmission system owner or operator.<sup>27</sup>

Transmission system operators (rather than the transmission system owners) must notify the relevant NRA if any circumstances<sup>28</sup> arise that would result in an entity from a non-EU country acquiring control of the transmission system or its operator. The relevant NRA must also seek the view of the European Commission<sup>29</sup> as to whether the foreign entity passes the unbundling and energy security tests and take "utmost account" of the Commission's view.

### A.4 Regulatory oversight

Under the Second Electricity and Gas Directives<sup>30</sup> Member States were required to establish NRAs. However, the NRAs that were established across the EU had different powers and levels of independence in the different Member States. In some Member States, NRAs had substantial powers and resources and developed into well-established bodies. In other Member States, NRAs had only recently been established or had limited powers spread between different governmental divisions which were subject to certain ministerial or governmental control.

Under the Third Electricity and Gas Directives,<sup>31</sup> the NRAs are required to be legally distinct and functionally independent from any other public or private entity. The staff of the NRA and any member of its decision-making body are not permitted to seek or take instructions from any government or other public or private entity and must act independently of any market interest. For that purpose, NRAs will have to have an independent legal personality, autonomy over their budget, sufficient human resources and independent management.

The Third Electricity and Gas Directives strengthen the NRAs' powers of market regulation and set out additional tasks for the NRAs, in particular, in the following respects:<sup>32</sup>

- ensuring the compliance of transmission and distribution system operators with any third party access regime, unbundling obligations, balancing mechanisms, congestion and interconnection management;
- reviewing the TSOs' investment plans, and providing in its annual report an assessment of how far the TSOs' investment plans are consistent with the European-wide ten year network development plan;
- monitoring network security and reliability and reviewing network security and reliability rules;
- monitoring transparency obligations;
- monitoring the level of market opening and competition and promoting effective competition in cooperation with competition authorities; and
- ensuring effective consumer protection measures.

The TEP, for the first time in European energy legislation, sets objectives for the NRAs with a notable European dimension. The Third Gas and Third Electricity Directives state that the NRAs' objective is to "promot[e], in close cooperation with the Agency, regulatory authorities of other Member States and the Commission, a competitive, secure and environmentally sustainable internal market in natural gas within the Community, and effective market opening for all customers and suppliers in the Community, and ensuring appropriate conditions for the effective and reliable operation of gas networks, taking into account long term objectives".<sup>33</sup>

As the Sector Inquiry has demonstrated, the European energy market still requires much improvement before it can function fully as an effective competitive market. A market that would be capable of better allocating sometimes scarce resources (on time), and improving any investment decisions that are made on infrastructure assets in particular in relation to the generation of electricity.

The effect of the NRAs' extended powers is not yet clear and it will be necessary to see how the changes play out in practice before any full evaluation is possible. It is likely that it will be sometime after the adoption and transposition of the TEP before any such evaluation will be possible.

### A.5 Agency for the Co-operation of Energy Regulators

In order to reinforce the position of regulators at European level and ensure continued co-operation, the ACER Regulation created the Agency for Co-operation of Energy Regulators ("ACER").

ACER is governed by the standard rules and practices which apply to Community regulatory agencies. Uniquely, ACER also has a separate board of regulators in order to safeguard the necessary independence of the regulators at the European level (the "Regulatory Board"). Within ACER, this special board is solely responsible for all regulatory matters and decisions. It functions alongside an administrative board responsible for administrative and budgetary matters (the "Administrative Board"). The Commission provides a shortlist from which the director of ACER is chosen. The director, who is responsible for representing ACER and managing ACER on a day to day basis, is then appointed by the Administrative Board in consultation with the Regulatory Board. Additionally, the structure of ACER includes a Board of Appeal competent to handle appeals against any decisions adopted by ACER.<sup>34</sup>

ACER is competent to:<sup>35</sup>

- issue opinions addressed to TSOs;
- issue opinions addressed to regulatory authorities;
- issue opinions and recommendations addressed to the Commission; and
- take individual decisions on technical issues.

ACER is competent, upon a request from the Commission or on its own initiative, to provide to the Commission an opinion on all issues which are relevant and relate to the reason why ACER was established.<sup>36</sup>

ACER is also required to provide the Commission with its opinion on the following:<sup>37</sup>

- draft statutes, lists of board members and draft rules of procedure; and
- the technical or market codes on the draft annual work programme and the draft ten year investment plan of the European Networks of TSOs for Electricity and Gas, respectively (see *below*).

ACER is permitted to provide recommendations designed to assist regulatory authorities and players in the market and to promote the sharing of information relating to good practice as well as fostering cooperation between national regulatory authorities and between regulatory authorities at regional level. Such guidelines can be part of ACER's own work programme or at the request of the Commission.<sup>38</sup>

Decisions taken by a regulatory authority must comply with any guidelines contained in the Third Gas and Electricity Directives

and Third Gas and Electricity Regulations. Upon the Commission's or any regulatory body's request, ACER will issue an opinion on whether or not a regulatory body's decision complies with the required guidelines. A national regulatory authority may also ask ACER to issue an opinion where the application of the guidelines referred to in the Third Gas and Electricity Directives and Third Gas and Electricity Regulations is unclear.<sup>39</sup>

It is also possible for ACER to stand as the competent authority to select the relevant regulatory regime for infrastructure that links at least two Member States. ACER also has the power to grant exemptions from the third party access regime in cases where the infrastructure concerned is located in more than one Member State.<sup>40</sup>

Since the original version of the ACER Regulation proposed by the European Commission, ACER has been given a range of additional tasks, which have widened ACER's scope considerably. ACER's tasks now include:

- participation in the development of European network codes;<sup>41</sup>
- monitoring the development of the energy markets, in particular in relation to retail gas and electricity prices;<sup>42</sup>
- monitoring the implementation of the TSO's ten year infrastructure investment plans;<sup>43</sup> and
- establishing non-binding "framework guidelines" on conditions for access to the network for cross-border electricity and gas exchanges (see *below*).<sup>44</sup>

For the most part ACER's competencies are considered to be advisory in their nature but the ACER Regulation does grant decision making powers in specific areas particularly with respect to cross-border projects and co-operation.<sup>45</sup> ACER also fulfills the position of a "Regulator of last resort" where the national regulator of a Member State using an ISO model has failed to appoint an ISO in the required timeframe.<sup>46</sup>

ACER operates under a framework which appears to be designed to leave ACER some freedom to fully define and exercise its role; in some cases responding to requests from the Commission and in others producing opinions on its own initiative. Depending on how ACER's role develops and its current director's involvement and initiatives ACER may be considered the first step towards a pan-European regulator.

The ACER Regulation entered into force in September 2009 but ACER was only launched officially in March 2011. The first Director of ACER, Alberto Pototschnig, was appointed in May 2010 for a term of five years, and in July 2015, the European Commission and the ACER Board of Regulators agreed to extend his mandate for another three years, commencing in September 2015. ACER is based in Ljubljana (Slovenia).

On 19 September 2014 ACER released a paper titled *Energy Regulation: A Bridge to 2025 Conclusions Paper* that sets out the Agency's approach to the future issues in the Energy Market. The paper sets out the five primary goals for ACER over the next ten years, none which mark a departure from its existing direction:

- enhancing Europe's energy security of supply;

- establishing and maintaining a liquid, competitive and integrated wholesale energy market;
- developing the low carbon society through renewable, flexible and smart energy supply;
- developing the retail market; and
- introducing new governance arrangements and developing stakeholder dialogue.

## A.6 ACER Framework Guidelines and European Network Codes

One task of the ENTSOs (as defined below) is the preparation of European network codes pursuant to Article 8 of both (a) Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005 (the "TEP Electricity Regulation"); and (b) Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003 and as amended by Regulation No 347/2013 of 1 June 2013 the "TEP Gas Regulation").

Article 6 of both the TEP Electricity Regulation and the TEP Gas Regulation tasks ACER with the elaboration of Framework Guidelines for these European network codes which will, in turn, serve as the reference document for ENTSO's work on the codes.

Since its inauguration, ACER has commenced 33 consultations<sup>47</sup>; and issued Framework Guidelines (described briefly in the paragraphs below) regarding the following network code framework guidelines:

- Electricity grid connections
- Capacity allocation and Congestion Management for Electricity
- Capacity allocation mechanisms for the European gas transmission network
- Gas balancing in transmission systems
- Electricity system operation
- Harmonisation tariff structures (draft at time of writing)
- Interoperability and data exchange rules for Gas Transmission Networks
- Electricity balancing

The main conclusion that can be drawn from these consultations and the subsequent publication of Framework Guidelines is that whilst the changes proposed in each set of Framework Guidelines may be relatively small, the full impact of the proposals will only become clear when they are implemented into the market and the cumulative effects can be observed and evaluated.

## A.7 What will be the effect of the Framework Guidelines and Network Codes?

It is not possible to give a detailed description of each of the Framework Guidelines and Network Codes in this chapter, as these are very technical and detailed. The benefits of such

coherent European codes are generally to be found in the intended elimination of inconsistencies at national level regarding, eg, tariff structures, capacity allocation rules, balancing arrangements and trading timetables and security of supply measures.

At present, such differences in market design lead to market segmentation, with some national markets remaining split into different local tariff or balancing areas. However, at the same time, the development of the European network codes will necessarily cause some friction to the existing, national approaches and is likely to be a long term project the results of which will be cumulative and not be available for some time.

## A.8 Co-operation between Transmission System Operators

The increasing energy demand and simultaneous import dependency of the EU will require improved transmission networks which are able to cope with the "energy traffic" created by the export and import of electricity and gas in peak demand conditions.

Cooperation in grid operation is therefore indispensable, especially in the electricity sector, where cooperation between TSOs will make an important contribution to network reliability particularly in heavily interconnected areas. The greater transparency and visibility of network development issues created will allow investments to be made where they are most effective and improve network reliability through coordinated investments.

The Third Electricity and Gas Regulations<sup>48</sup> formalise the cooperation between transmission network operators, which at present is channelled through platforms such as GTE and ETSO, through the establishment of a European Network for Transmission System Operators for the electricity and gas sector ("ENTSO-E" and "ENTSO-G", respectively). The ENTSOs' responsibilities include the following core areas that are set out below:<sup>49</sup>

- the development of coherent market and technical codes needed for the integration of the electricity and gas markets, which the ENTSOs are tasked to develop in co-operation with ACER and the Commission on the basis of the framework guidelines developed by ACER (see below for further details);
- the development of common network operation tools to ensure coordination of network operation in normal and emergency conditions, including a common incident classification scale, and research plans;
- the finance and management of cooperative research and innovation activities focused on the technical development of European electricity and gas networks in relation to energy security, efficiency and low carbon technologies;
- the coordination of grid operation, ie, to exchange network operational information and the coordinated publication of information on network access; and
- the coordination of the planning of network investments and the monitoring the development of the transmission network capacities. The two ENTSOs must publish a European-wide and ten year forward-looking investment plan every two years.

The overall effect of the increased co-operation of TSOs in the framework of the strengthened ENTSOs will undoubtedly be a greater degree of market harmonisation which in turn might result in better network and operational reliability and as such in better security of supply. Therefore, and given the range of issues with which the new ENTSOs will be charged, the question arises whether the ENTSOs are only a stepping stone on this journey towards greater network harmonisation and interoperability, the next step being a single European TSO under ACER as the single European regulatory authority.

### An Internal Energy Market - European Network Codes

The EU is taking strides towards a functional Internal Energy Market ("IEM") through the creation of binding network codes that provide harmonised rules for the operation of the gas and electricity sector in Europe. Pursuant to the Third Energy Package, these rules effectively govern cross-border electricity and gas market transactions, allowing for better management of energy flows given the increase in interconnections and trade between countries in the IEM.<sup>50</sup> In effect, network codes have been drafted so as to align wholesale market and network access arrangements in EU states, facilitating the emergence of a competitive European market in electricity and gas.

The European Commission is responsible for defining the annual priority list for the development of network codes through a consultation process under Article 6(1) of both a) Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005 (the "TEP Electricity Regulation"); and (b) Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003.

and as amended by Regulation No 347/2013 of 1 June 2013 the ("TEP Gas Regulation"). Once the priority list has been defined, the Agency for the Cooperation of Energy Regulators (ACER) develops framework guidelines which set principles for developing specific network codes under Article 6 of both the TEP Electricity Regulation and TEP Gas Regulation.<sup>51</sup>

The EU ENTSOs (ENTSO-E and ENTSOG) draft these codes pursuant to Article 8 of the TEP Electricity Regulation and TEP Gas Regulation based on the Framework Guidelines produced by ACER. If ACER finds that the code produced meets the Framework Guidelines and the EU's internal market objectives, it is recommended to the Commission to undergo the process of comitology. Once a Cross-Border Committee (consisting of specialists from national energy ministries of Member States) accepts the draft network code, it is adopted with the approval of the Council of the European Union and the European Parliament.

### Legal Status and National Implementation

These network codes have been enacted in the form of regulations, making them directly applicable and binding in their entirety on Member States. Accordingly, they take precedence over national provisions. However, if national legislation, standards and regulations are compatible with the provisions of the European Network Codes (ENCs), they will retain their applicability provided that they consist of more stringent requirements and standards than the European network codes.

In the electricity sector there are currently 8 network codes, of which 5 are in force and 3 are awaiting validation by the European Parliament and the Council having already been validated by Member States. These network codes fall into 3 key interrelated areas:

### Market Codes

#### Capacity Allocation and Congestion Management (NC CACM)

The NC CACM sets out methods for cross-zonal capacity allocation and congestion management in the Pan-European day-ahead and intra-day markets. It was the second network code to be developed by ENTSO-E and entered into force in August 2015. One of the principle objectives of this code is to translate the vision of the intraday 'Target Model' for electricity markets in the EU into a set of binding rules. The harmonisation of capacity allocation mechanisms and congestion management regimes is important in order to avoid creating distortions in the electricity markets which would undermine further integration of European power markets. The NC CACM was established under Commission Regulation (EU) 2015/1222 of July 2015 (The "Regulation on Market Coupling") which made market coupling legally binding across the EU. The NC CACM effectively puts in place the legislative framework necessary for the market coupling process across the EU, and establishes the process by which bids and offers from national power exchanges for cross-border trading are brought together and matched in an optimal manner across borders.

Following the entry into force of the NC CACM, market participants including Member States, ENTSO-E, TSOs, regulators and power exchanges have been working together to develop the methodologies and tools set out in the NC CACM.

Key features of the NC CACM include:

- Establishment of new entities such as nominated electricity market operators (NEMOs) designated to perform tasks related to single day-ahead or intraday coupling. They act as electricity exchanges and, subject to certain exceptions, a NEMO designated in one Member State has the right to offer day-ahead and intraday trading services with delivery in another Member State.
- It specifies the way in which Bidding Zones will be defined and how the volumes of capacity simultaneously available across bidding zones will be calculated
- It introduces the flow-based capacity calculation method for the first time which must be applied by TSOs except where the electricity networks are not meshed and such method would not add value compared to a coordinated NTC capacity calculation method
- It requires TSOs and NEMOs to develop and propose common methodologies, terms and conditions for approval by National Regulatory Authorities (NRAs) within fixed legal timelines

ENTSO-E's 2nd Report on the progress and potential problems with the implementation of Single Day-Ahead and Intraday Coupling<sup>52</sup>, published in February 2017 notes that the creation of a core capacity calculation region represents a major challenge to all parties, including the TSOs, NEMOs and NRAs.

In January 2017, the NRAs agreed to a proposal by all TSOs to amend the Common Grid Model Methodology and the Generation and Load Data Provision Methodology which set out the information and processes necessary to create a Common Grid Model representing the European interconnected system for the purposes of single day ahead and intraday coupling methodologies under the NC CACM. In June 2017, all TSOs submitted a proposal to amend the NC CACM to include a new bidding zone to one of the existing Capacity Calculation Regions under the code. A response to this proposal is pending (at the time of writing).

#### Forward Capacity Allocation (NC FCA)

The NC FCA was adopted and published in September 2016 and entered into force on 17 October 2016<sup>53</sup>. It establishes common rules for forward capacity allocation over a long-term time frame, including the establishment of a common methodology for determining the volumes of capacity simultaneously available between bidding zones. The principle objective of the NC FCA is to facilitate the development of liquid and competitive forward markets in a coordinated manner across Europe. Putting in place harmonised cross-border forward markets will enable parties to secure capacity and hedge positions ahead of the day-ahead timeframe more efficiently in IEM.

Key features of the NC FCA are:

- It details rules regarding the type of long-term transmission rights that can be allocated via explicit auction and the methods of compensation available to holders of transmission rights should their rights be curtailed.
- It does not stipulate harmonised long-term allocation rules (HAR) in itself but requires all TSOs to develop a proposal for such rules no later than 12 months after the NC FCA enters into force.
- Early implementation of the FCA means that the first EU HAR was submitted and applied to the auctions of 2016. Relevant TSOs and regulators have amended the EU HAR to further align it with the FCA (now that it has been adopted) with the aim that final HRA will be approved by relevant NRAs in 2017, becoming applicable to forward capacity allocation and allocated long-term transmission rights with a delivery date on or after 1 January 2018.

#### Electricity Balancing (NC EB)

The NC EB is intended to harmonise balancing markets, ensuring a clear time separation between intraday trading and balancing by TSOs, and the standardisation of balancing products across Europe. This includes rules for balancing energy pricing and imbalance pricing. Together, these rules aim to increase opportunities for cross-border trading, facilitating the efficiency of balancing markets. On 22 July 2015, ACER published its recommended draft of the NC EB for adoption, and the code was validated by Member States on 16 March 2017. NC EB is the last of the eight electricity network codes to be validated by Member States and is currently pending approval by the European Parliament and the European Council.

Key Features of the NC EB are:

- It defines the roles and responsibilities of transmission system operators (TSOs), Distribution System Operators (DSOs), Balance Responsible Parties (BRPs) and Balancing Service Providers (BSPs) to procure and exchange balancing products that will balance the European markets from day ahead to real time in the most efficient way.
- It requires TSOs to develop a proposal for Standard Products for Balancing Capacity and Standard Products for Balancing Energy no later than one year after the entry into force of this network code. TSOs must harmonise pricing methods for at least each Standard Product for Balancing Energy after the NC EB enters into force.
- In some cases it permits TSOs to reserve cross-zonal capacity for the exchange of balancing capacity or sharing of reserves when socio-economic efficiency is proved<sup>54</sup>.

#### Grid Connection Codes

##### Code on Grid Connection Applicable to all Generators (NC RfG)

The NC RfG seeks to set common requirements for generators across the EU, detailing rules for grid connection of power-generating facilities, principally on new power generating installations to national electricity networks. With more power being generated from embedded renewable technologies there is a need for network operators at transmission and distribution system levels to introduce this network code to ensure security of a stable supply. In addition to general requirements, the NC RfG details specific requirements for Synchronous Power-Generating Modules, Power Park Modules and AC connected Offshore Power Park Modules to the interconnected system. The NC RfG was adopted on 14 April 2016 and entered into force on 17 May 2016.

Key Features of the NC RfG are:

- It applies to new power generating modules and shall apply to existing generating modules if this has been proposed by the relevant TSO and this proposal has been approved by the relevant NRA.
- It contains specific requirements for Synchronous Power-Generating Modules, Power Park Modules and AC connected Offshore Generation with each of these categories being divided into four categories (A-D), with thresholds in terms of installed capacity of the Power Generating Module and voltage level.
- It is not pragmatic or cost effective to have complete harmonisation of all requirements for Power Generating Modules (due to geographic dispersion of generation and variance), and therefore, although upper limits for capacity thresholds are set at EU level, the final threshold is determined at national level by the relevant TSO.

##### Demand Connection Code (NC DCC)

The NC DCC establishes requirements for new demand users and distribution connections to the network. In doing so, it sets out rules for grid connection for four categories of entities including transmission-connected demand facilities, transmission connected distribution facilities, distribution systems (including closed distribution systems) and demand units that provide demand response services to relevant operators and TSOs. It aims to facilitate increased competition

in the internal electricity market, security and the integration of renewable electricity. The key objective is to ensure system operators use demand facilities and distribution systems capabilities in a transparent, non-discriminatory manner so as to provide a level playing field throughout the Energy Union. The DCC mainly focuses on the connection of industrial loads and distribution networks. It was published on 18 August 2016 and entered into force on 7 September 2016.

Key features of the NC DCC are:

- It sets up a common framework for network connection agreements between network operators and demand facility owners or distribution network operators
- It applies to new power generating modules and to existing generating modules if this has been proposed by the relevant TSO and this proposal has been approved by the relevant NRA.
- It sets out requirements for demand side response, including reactive power control (RPC), Active Power Control (APC), Transmission Constraint management (TCM), System Frequency Control (SFC) and Very Fast Active Power Control (VFAPC).

Code on High-Voltage-Direct-Current Connections (NC HVDC)

The NC HVDC specifies requirements for long distance direct current connections and links between different synchronous areas and DC-connected Power Park Modules, such as offshore wind farms, which are becoming increasingly prominent in the European electricity system. This code entered into force on 28 September 2016.

Key features of the NC HVDC are:

- It does not apply to existing HVDC systems and existing DC-connected power park modules unless they have been modified to the extent that their connection agreement must be substantially revised in accordance with specified procedures.
- It details common requirements for active power control and frequency support, reactive power control and voltage support, fault ride through, protection devices and settings, DC-connected power park modules and remote-end HVDC converter stations.

## Operational Codes

Code on System Operation (NC SO)

The three codes for operation in normal conditions, (Operational Security, Operational Planning & Scheduling and Load-Frequency Control & Reserves) designed by the ENTSO-E have been merged into one code – the System Operation.

This network code sets out common requirements for the maintenance of the secure operation of the interconnected transmission system in real time. In doing so, it establishes harmonised rules for ensuring the operational security of the IEM and sets requirements, ranging from the year-ahead timeframe to real time, for assessing the adequacy of the interconnected power system. The NC SO details rules for planning outages required by TSOs when they have cross-border impacts on power flows. This code received a positive vote in committee on 4 May 2016 but it has yet to be published.

Key features of the NC SO are:

- It details common methodologies and principles pertaining to operational security requirements, interconnected system operational planning, common load frequency control processes and control structures.
- It sets out requirements pertaining to the planning phase ahead of real time operations, defining the roles of TSOs, DSOs and significant grid users towards the operational scheduling procedures and details the way in which these parties exchange data.
- It determines the way in which availability plans should be conducted.
- It establishes common security standards by harmonising quality of system operation and promoting coordination of operation activities
- It details common rules as to system frequency quality, providing a framework for the use, sharing and exchange of reserves.

Code on Emergency and Restoration (NC ER)

This code provides a set of common minimum requirements including remedial procedures and principles to coordinate system operation across Europe in Emergency, Blackout and Restoration states. The principle objective of the code is to avoid widespread disturbances and prevent the deterioration of an incident, ensuring efficient restoration from states of emergency and blackouts. Thus, it involves advanced plans for system restoration, re-synchronisation, and information exchange, as well as the ad-hoc analysis of the incidents. On 24 June 2015, ACER delivered a positive opinion and recommended the code for adoption along with a number of proposals for changes. The NC ER has been approved by Member States and is currently awaiting validation by the European Parliament and Council. It is expected to enter into force in late 2017.

Key features of NC ER are:

- It sets out common rules in the design, implementation and activation of the required System Defence Plan and Restoration Plan, including specific procedures which must be incorporated into these plans such as the Resynchronisation procedure, the Frequency Management Procedure, the Procedure for suspension of market activities and the Procedure for the restoration of market activities.
- It requires TSOs to define a test plan in coordination with DSOs and in consultation with significant grid users, Defence Service Providers and Restoration Service Providers<sup>55</sup>.

## Recent network codes governing the gas sector include the following:

Capacity Allocation Mechanisms in Gas Transmission Systems network code (NC CAM)

The NC CAM came into force on 3 November 2013 and applied from 1 November 2015. The NC CAM is the first European network code to be developed, and is aimed at ensuring a more efficient allocation of capacity on the interconnection points between two or more Member States or within the same Member State and to support the creation of efficient wholesale gas markets in the EU. The code requires gas grid operators to use harmonised auctions when selling access to pipelines.

These auctions sell the same product at the same time and according to the same rules across the EU.<sup>56</sup>

ACER's implementation monitoring report, published in October 2015, notes that implementation of the core requirements of NC CAM, such as the auctioning of standard capacity products via booking platforms, is high but that full implementation has only been achieved in Belgium and the UK.<sup>57</sup>

In April 2017, a revised network code which set up capacity allocation mechanisms in gas transmission systems for existing and incremental capacity came into force. The updated code sets out how adjacent TSOs should cooperate in order to facilitate capacity sales, having regard to the general commercial and technical rules related to capacity allocation mechanisms. The revised NC CAM has a wider scope in relation to the rules for the offer of incremental capacity.

#### Code on Interoperability and Data Exchange Rules

This network code aims to facilitate EU-wide cross-border gas transports by introducing common rules and harmonised principles pertaining to the establishment and amendment of interconnection agreements in respect of interconnection points. In this way it aims to remove perceived barriers to cross-border gas flows, facilitating EU-wide market integration. It outlines a common set of units which must be used by TSOs for any data exchange and publication, and aims to regulate the monitoring and management of gas quality which may give rise to trade restrictions. Other key areas covered by this network code include odourisation, common data exchange solutions and rules pertaining to dispute settlement mechanisms in interconnection agreements. This code was published in the Official Journal of the European Union on 30 April 2015 and entered into force on 1 May 2016.

Key features of the code on interoperability and data exchange rules:

- It details common rules for gas flow control in respect of adjacent TSOs including standard measurement principles for gas quantity and quality, rules for the matching process and the use of a balancing account in the allocation of gas quantities with limits that take into account specific characteristics of each interconnection point.
- Requires that TSOs identify the information contained in interconnection agreements that directly affect network users and inform them of that information<sup>58</sup>.
- Requires that TSOs use a common set of defined units in for any data exchange and data publication related to the Regulation.
- It details requirements in relation to short and long-term monitoring and information provision of gas quality and gas quality variation.
- Requires that where a restriction to cross-border trade arises due to difference in odourisation practices (which cannot be avoided by the relevant TSOs and is recognised by NRAs) the NRAs may require the TSOs to reach an agreement within six months.
- Provides that where no agreement can be reached after six months the TSOs or NRAs believe that agreement between TSOs not sufficiently effective to remove the

restriction, the TSOs and NRAs shall define a detailed plan setting out the most cost effective method to remove a recognised restriction at the specific cross-border interconnection point within 12 weeks.

ENTSOG consulted on proposals to amend this code to incorporate the CEN standard on H-Gas quality in 2016 with a view to submitting a proposal to ACER in 2017. However, following an announcement by the European Commission that it would not be pursuing a legally binding application of this standard in October 2016, ENTSOG has confirmed that it will no longer recommend that the code be amended to include the CEN standard.<sup>59</sup>

ENTSOG's monitoring report, published in September 2016, found that the majority of interconnection points are covered by interconnection agreements between adjacent TSOs, and that the code has not created unavoidable cross-border trade restrictions due to differences in gas quality or odourisation practices.<sup>60</sup>

#### Code on Gas Balancing of Transmission Networks

This network code introduces a market-based and harmonised daily balancing regime for Europe's transmission networks, facilitating gas trade across balancing zones. It contributes towards the development of market liquidity, supporting the development of Europe's competitive short term wholesale gas market with gas flexibility that would enable network users to efficiently balance their balance portfolios. This network code entered into force on 1 October 2015.

Key features of the code on Gas Balancing in Transmission Networks are:

- Introduces balancing rules including network related rules on nominations procedures at interconnection points
- Defines and sets out the shared balancing responsibilities between TSOs and network users with a view to move towards residual TSO balancing where market liquidity allows
- Sets out the TSO neutrality principle
- Details the harmonisation of (re-) nominations procedures (e.g. timing and communication procedures)
- Introduces new rules on imbalance charges, within day obligations and operation balancing between transmission systems

A report published by ACER in November 2016 highlighted issues with the implementation of this code, particularly in relation to inconsistent implementation and non-compliance in some Member States. ACER also found that some legal interpretations of the code did not take into account its intent and main objectives, and that greater effort was required in order to ensure full implementation of the code. ACER recommends that the Commission consider bringing infringement proceedings in instances where there has been no significant improvement by the time of ACER's 2017 report<sup>61</sup>.

#### Code on harmonised transmission tariff structures for gas (NC TAR)

In March 2017, the European Commission adopted a regulation establishing a network code on harmonised transmission structures for gas. NC TAR entered into force on 6 April 2017 and

will apply in stages from 6 April 2017, 1 October 2017 (in relation to clearing prices and payable prices, and publication requirements) and 31 May 2019 (in relation to reserve prices and the reconciliation of revenue). The code applies at all entry and exit points of gas transmission networks, and establishes rules on the application of a reference price methodology, the associated consultation and publication requirements as well as the calculation of reserve prices for standard capacity products,

ENTSOG published a guidance document on the implementation of NC TAR in March 2017<sup>62</sup>, which notes that NC TAR supplements and forms an integral part of the Gas Regulation.

#### Congestion Management Procedures

The European Commission's rules on congestion management procedures aim to reduce congestion in gas pipelines by requiring TSOs to make use of their reserved capacity or risk losing it. As such, NRAs require TSOs to partially or fully withdraw systematically underutilised contracted capacity on an interconnection point where the network user has not sold or offered under reasonable conditions its unused capacity and where other network users request firm capacity. The Congestion Management Procedures were adopted on 24 August 2012 and came into force on 1 October 2013.

Key features of the Congestion Management Procedures include:

- The introduction of the firm day-ahead use-it-or-lose it and the long-term use-it-or-use-it mechanisms.
- A requirement that TSOs must implement an incentive-based over subscription buy-back scheme in order to offer additional capacity on a firm basis, subject to NRAs approval. NRAs are required to determine the distribution of the resulting sales revenue and costs of the buy-back scheme between the TSOs and network users.

In June 2017, ENTSOG published an updated monitoring report on these procedures, noting that most TSOs will be compliant with the Congestion Management Procedures by the end of the first quarter 2017, with the remaining two expected to be compliant by the end of 2017.

ACER's annual monitoring report on congestion at interconnection points contains recommendations to ENTSOG, NRAs and TSOs that data reliability and transparency be improved, and a request that the European Commission clarify certain elements of the Congestion Management Procedures, such as the definition of contractual congestion.<sup>63</sup>

A call of evidence on congestion indicators by ACER in August 2016 raised several areas in which amendments to the Congestion Management Procedures may be necessary. ACER intends to present an opinion/recommendation on any potential Congestion Management Procedure Guidelines amendments before the end of 2017<sup>64</sup>.

Consultation on annual priorities list for 2017 network code guidelines

On July 2016, the Commission issued a consultation with ACER, the ENTSOs and other relevant stakeholders seeking views on the establishment of annual priority lists for the development of network codes and guidelines for 2017. On 18 January 2017, the

European Commission published its decision, proposing to prioritise on-going work and ensuring the full implementation of network codes and guidelines rather than to introduce new priorities. Rules relating to system operation, emergency and restoration requirements and procedures, and balancing rules were identified as priorities in relation to electricity network rules. The annual priority list for gas network rules includes harmonised transmission tariff structures for gas and rules regarding an EU-wide market-based approach on the allocation of "new build" gas transmission capacity<sup>65</sup>.

#### A.9 Transparency and record keeping obligations

The Third Electricity and Third Gas Directives also set out a number of record keeping obligations on electricity generators, gas network operators, and supply undertakings that are required to keep a record of all data relating to operational decisions and trades.<sup>66</sup>

The Commission hopes that these obligations enable regulators to effectively assess allegations of market abuse and study past behaviour of market participants. In particular, the Commission believes that a review of the relevant records enables regulators to investigate whether operational decisions were based on sound economic reasoning rather than attempts to manipulate the market. The Commission has stated that these record keeping obligations are, in the case of some types of traders (eg, banks), not in addition to relevant record keeping obligations of such traders under the Financial Services Legislation (MiFID, REMIT and EMIR) set out in more detail below.

#### Access to storage and LNG facilities

The Guidelines for Good Third Party Access Practice for Storage System Operators ("GGPSSO") of the Madrid Forum are voluntary guidelines which were found not to have been widely implemented. The New Gas Regulation seeks to make the GGPSSO binding on relevant market participants.

The Third Gas Directive also establishes legal and functional unbundling rules for storage system operators that are part of supply undertakings<sup>67</sup> and enhances the NRAs' powers to manage any access to gas storage.<sup>68</sup>

The Third Gas Directive and the New Electricity Regulation have been put in place to change and update the current legislation which deals with exemptions from regulated third party access for major new infrastructure.<sup>69</sup> The European legislators aimed to set out a streamlined procedure with respect to exemptions for the overall benefit of the market. Article 36 of the Third Gas Directive sets out a list of applicable conditions and detailed procedural provisions and is therefore much more comprehensive than the previous Article 22 of the Second Gas Directive. However, the procedural requirements have become more complex with advent of ACER as part of the decision making process in cases where the infrastructure crosses the borders of two or more Member States.

#### A.10 Development of energy infrastructure

Regulation (EU) No 347/2013 of the European Parliament and of the Council of 17 April 2013 on guidelines for trans-European energy infrastructure and repealing Decision No 1364/2006/EC and amending Regulations (EC) No 713/2009, (EC) No 714/2009 and (EC) No 715/2009<sup>70</sup> ("The New TEN-E Regulation")

The New TEN-E Regulation was adopted on 17 April 2013 and entered into force on 15 May 2013. It sets out guidelines for the development and interoperability of priority corridors and energy infrastructure at European level.<sup>71</sup> It establishes 12 strategic regional groups, based on a priority corridor and a geographic area, for energy infrastructure with a trans-European/cross-border dimension.<sup>72</sup> The New TEN-E Regulation sets out a process to establish on a two-yearly basis Union-wide lists of 'Projects of Common Interest' ("PCIs"), which will contribute to the development of energy infrastructure networks in each of the 12 corridors.<sup>73</sup> The PCIs are adopted by the decision-making body of each regional group consisting of the Commission and Member States.<sup>74</sup> Article 4 of the New TEN-E Regulation provides detailed criteria that PCIs must meet.

Under this regulation, PCIs are subject to different, improved, regulatory treatment as well as faster and more efficient permitting procedures. They may receive funding under the Connecting Europe Facility<sup>75</sup> and the EU financial assistance.<sup>76</sup>

The New TEN-E Regulation puts in place process requirements for granting PCI permits. These requirements include:

- giving priority status to PCIs;<sup>77</sup>
- time limits for the permit process;<sup>78</sup>
- a "one-stop-shop" permit;<sup>79</sup>
- a single co-ordinating authority;<sup>80</sup> and
- a requirement that Member States assess the potential for streamlining permitting procedures.<sup>81</sup>

The Commission published guidelines on streamlining environmental assessment procedures for energy infrastructure PCIs as required by Article 7(4) of the New TEN-E Regulation.<sup>82</sup> The purpose of this guidance is to support Member States in defining adequate legislative and non-legislative measures to streamline the environmental assessment procedure and to ensure coherent application of the environmental procedure for PCIs.

On 18 November 2015, the Commission published the second PCI list, updating the list adopted in October 2013<sup>83</sup>. This updated list includes 195 energy infrastructure projects that are essential for the completion of the IEM and for reaching EU's energy policy objectives of secure, sustainable and affordable energy. These PCIs are intended to help to deliver the EU's climate objectives, furthering EU-wide integration by diversifying energy sources and transport routes.

Since the adoption of the first PCI list in 2013 which contained 108 projects, sixty two projects are expected to be completed by the end of 2017. The PCI list is updated every two years in order to integrate newly needed projects and remove obsolete ones. The current list is expected to be updated again in 2017.

## B. Emissions Trading – Financial Services Legislation:

### B.1 MiFID

The European Commission published its legislative proposals to revise the Markets in Financial Instruments Directive ("MiFID") on 20 October 2011, four years after the MiFID implementation date of 1 November 2007.<sup>84</sup> The changes to MiFID, known informally as

MiFID II, have resulted in a significant overhaul of the way in which financial markets operate in Europe. In its press release of 20 October 2011 the European Union stated that MiFID II aims "to make financial markets more efficient, resilient and transparent, and to strengthen the protection of investors."

On 15 April 2014, the European Parliament endorsed MiFID II and MiFIR. They were adopted on 13 May 2014 by the Council of the European Union and published in the Official Journal on 12 June 2014, coming into force on 2 July 2014. Member States must implement the provisions by 3 January 2018 (with the exception of certain provisions). On 22 May 2014 ESMA published a Discussion Paper and Consultation Paper on MiFID implementation<sup>85</sup>.

MiFID II and MiFIR set out the legal framework governing the requirements applicable to investment firms, trading venues, data reporting service providers and third country firms providing investment services/activities in the EU.

The legislation is divided in two; a new directive and a new regulation:

MiFID Level 1 Directive (2004/39/EC) has been recast, with a new directive amending the following provisions:

- specific requirements regarding the provision of investment services;
- the scope of exemptions from the current directive will be stricter (this may be relevant for the energy sector);
- requirements relating to the organisational and conduct of business for investment firms;
- organisational requirements for trading venues;
- authorisation and on-going obligations applicable to providers of data services;
- powers available to competent authorities;
- sanctions; and
- rules applicable to third-country firms operating via a branch.

The Markets in Financial Instruments ("MiFIR") establishes uniform and directly applicable requirements in relation to:

- disclosure of trade transparency data to the public and transaction data to competent authorities;
- removing barriers to non-discriminatory access to clearing facilities;
- mandatory trading of derivatives on organised venues;
- specific supervisory actions regarding financial instruments and positions in derivatives; and
- provision of services by third-country firms without a branch.

The Commission's legislative changes contained within MiFID II and MiFIR, follow the preparatory work of the Committee of European Securities Regulators (replaced by the European Securities and Markets Authority ("ESMA") in January 2011) and the Commission in 2010, including the Commission's consultation paper on the review of MiFID in December 2010.

Importantly for the energy sector, emission allowances may now fall within the scope of MiFID and will be classified as financial instruments, so that both derivatives and secondary spot markets in emission allowances will be subject to financial market regulation.

Spot contracts (which currently include transfers of EUAs) do not currently constitute "financial instruments" under MiFID and have therefore been largely unregulated. Under Article 38(2) of the MiFID Level 2 Implementing Regulation,<sup>86</sup> a "spot contract" is defined as a contract for the sale of a commodity, asset or right, under the terms of which delivery is scheduled to be made within the longer of two trading days and the period generally accepted in the market for that commodity, asset or right as the standard delivery period. The proposed changes to MiFID would be set out in the following way:

- futures and other derivatives in relation to emission allowances (previously under Annex I C (10) instruments) will now be in C(4); and
- there will be a new category of "financial instrument (Annex I Section C (11)) to cover emission allowances, including units recognised for compliance with the requirements of the Emissions Trading Scheme. Spot trading in emissions allowances will therefore be regulated under MiFID.

The EU-wide implementation date for MiFID II is 3 January 2018.

## B.2 REMIT

The European Parliament has adopted the text of a regulation on wholesale Energy Market Integrity and Transparency ("REMIT")<sup>87</sup> which is applicable to energy companies in Europe and contains rules that prohibit the use of inside information, require the public disclosure of that inside information and prohibit certain behaviour constituting market manipulation. It was announced in December 2011 and has been phased in over 2012. Member States had until 29 June 2013 to implement all necessary procedures to give effect to REMIT.

Prior to REMIT the monitoring of energy markets was sector-specific and conducted by each Member State. As the structure of the energy markets becomes increasingly pan-European it is more difficult for national regulators to function effectively as they do not have access to Europe-wide information.

ACER's position as quasi centralised European regulator collecting and screening wholesale transaction market data, performing initial assessments of anomalous events and then reporting to the national regulators for enforcement if necessary.<sup>88</sup> As noted above the precise role of ACER has not been defined but with its Europe-wide perspective ACER is able to conduct a more comprehensive review as a centralised body and then hand down to the national regulators the roles relating to punishment, prosecution and enforcement. In this respect, on 17 June 2016, ACER published an updated 4th Edition of the Guidance Paper<sup>89</sup> on its website in relation to REMIT and its implementation. Additional Q&A documents are published regularly on ACER's website.<sup>90</sup>

REMIT was set up as part of a dedicated market integrity and transparency framework for the gas and electricity wholesale markets with a central reporting point at EU level and an EU-wide monitoring scheme.

The key features of REMIT are outlined below:

- the regulation prohibits insider trading<sup>91</sup> and market manipulation<sup>92</sup> in relation to wholesale energy products ("WEP"); this now includes supply contracts to certain large consumers;
- the regulation requires timely public disclosure of inside information; this now extends to information regarding the business or facilities which a market participant, or its parent or a related undertaking, owns, controls or operates, in whole or in part;<sup>93</sup>
- additional reporting obligations regarding transactions and the status of operational assets will apply;<sup>94</sup>
- national regulatory authorities had to be given enhanced investigatory and enforcement powers<sup>95</sup> by 29 June 2013 and penalty rules must be devised and implemented.

All market participants need to ensure that appropriate measures are in place regarding the disclosure and use of information between group entities (and related undertakings) to minimise the impact of these measures.

Under REMIT, market participants have specific registration and reporting obligations. defines a "market participant" as any person, including transmission system operators, who enters into transactions, including the placing of orders to trade, in one or more wholesale energy markets. This definition does not distinguish between upstream or downstream market participants.

ACER currently considers at least the following persons to be market participants under REMIT if entering into transactions, including orders to trade, in one or more wholesale energy markets (ie any market within the EU on which WEPs are traded):

- energy trading companies within the meaning of an "electricity undertaking" pursuant to Article 2(35) of Directive 2009/72/EC carrying out at least one of the following functions: transportation, supply, or purchase of electricity, or within the meaning of a "natural gas undertaking" pursuant to Article 2(1) of Directive 2009/73/EC carrying out at least one of the following functions: transportation, supply or purchase of natural gas, including LNG;
- producers of electricity or natural gas within the meaning of Article 2(2) of Directive 2009/72/EC and Article 2(1) of Directive 2009/73/EC, including producers supplying their production to their in-house trading unit or energy trading company;
- shippers of natural gas;
- balance responsible entities;
- wholesale customers within the meaning of Article 2(8) of Directive 2009/72/EC and Article 2(29) of Directive 2009/73/EC;
- final customers within the meaning of Article 2(9) of Directive 2009/72/EC and Article 2(27) of Directive 2009/73/EC, acting as a single economic entity that have a consumption capacity of 600GWh or more per year for gas or electricity. If the consumption of a final customer takes place in markets with interrelated prices, his total consumption capacity is the sum of his consumption capacity in all those markets;

- TSOs within the meaning of Article 2(4) of Directive 2009/72/EC and Directive 2009/73/EC;
- SSOs within the meaning of Article 2(10) of Directive 2009/73/EC;
- LSOs within the meaning of Article 2(12) of Directive 2009/73/EC; and
- investment firms within the meaning of Article 4(1), No 1, of Directive 2004/39/EC.

REMIT applies to trading in WEPs in any market within the European Union but REMIT does not contain a geographical limitation as to the location or origin of inside information in relation to WEPs.

REMIT defines WEPs as the following contracts and derivatives, irrespective of where and how they are traded:

- contracts for the supply of electricity or natural gas where delivery is in the European Union;
- derivatives relating to electricity or natural gas produced, traded or delivered in the European Union;
- contracts relating to the transportation of electricity or natural gas in the European Union;
- derivatives relating to the transportation of electricity or natural gas in the European Union.

Contracts for the supply and distribution of electricity or natural gas for the use of final customers are not WEPs, unless a specific consumption capacity is met (ie 600GW per year).

In addition, the Implementing Regulation provides further, more detailed, lists of contracts which are reportable to ACER pursuant to Article 8 of REMIT; and individual transactions need to be checked against this list to ascertain more specific reporting obligations.

Where LNG is produced in the EU, traded in the EU or delivered in the EU, it will fall into the definition of WEP set out above and will be subject to REMIT. If this is not the case the transaction will not be a WEP and will not be subject to REMIT.

Market participants will be required to register with the relevant NRA. If the market participant has multiple sites in Europe, it does not register with multiple NRAs, unless each site is a separate legal person and each site enters into transactions which are required to be reported.

The only exception from the registration requirement is for market participants who engage only in transactions relating to:

- contracts for the physical delivery of electricity produced by a single production unit with a capacity equal to or less than 10MW or by production units with a combined capacity equal to or less than 10MW; or
- contracts for the physical delivery of natural gas produced by a single natural gas production facility with a production capacity equal to or less than 20MW.

The CEREMP is an online platform that has been set up to gather basic information about all market participants trading European WEPs. Various NRAs such as Ofgem in the UK will collect information from market participants in their respective Member States and feed it into CEREMP.

Pursuant to REMIT, market participants must report the following:

- transaction data;
- fundamental data; and
- inside information.

REMIT's reporting obligations require market participants, or a person or a specified authority on their behalf, to provide ACER with a record of wholesale energy market transactions, including orders to trade.

Article 8 of REMIT obliges ACER to draw up and maintain a public list of standard contracts that is updated in a timely manner. The current list of standard contracts comprises several hundred different contract types and can be found here: <https://www.acer-remit.eu/portal/standardised-contract>

The sole purpose of the public list of standard contracts is to display the characteristics of each contract type for which the standard reporting form is applicable. The creation of the list of standard contracts has no intention to assign unique identifiers to the contracts listed, nor will the information collected be used for matching against the transaction reports.

The Implementation Regulation specifies that the following contracts are to be reported to ACER:

As regards WEPs that are contracts for the supply of electricity or natural gas with delivery in the European Union (irrespective of where and how they are traded, in particular regardless of whether they are auctioned or continuously traded):

- intraday or within-day contracts;
- day-ahead contracts;
- two-days-ahead contracts;
- week-end contracts;
- after-day contracts;
- other contracts for the supply of electricity or natural gas with a delivery period longer than two days;
- contracts for the supply of electricity or natural gas to a single consumption unit with a technical capability to consume 600GWh/year or more; and
- options, futures, swaps and any other derivatives of contracts relating to electricity or natural gas produced, traded or delivered in the European Union.

As regards WEPs in relation to the transportation of electricity or natural gas in the European Union:

- contracts relating to the transportation of electricity or natural gas in the European Union between two or more locations or bidding zones concluded as a result of a primary explicit capacity allocation by or on behalf of the TSO, specifying physical or financial capacity rights or obligations;

- contracts relating to the transportation of electricity or natural gas in the European Union between two or more locations or bidding zones concluded between market participants on secondary markets, specifying physical or financial capacity rights or obligations, including resale and transfer of such contracts; and
- options, futures, swaps and any other derivatives of contracts relating to the transportation of electricity or natural gas in the European Union.

ACER has stated that the upstream transport capacity contracts for gas are not covered by the reporting obligation in Article 3(1)(b) of the Implementing Regulation<sup>96</sup>.

Unless concluded on Organised Market Places, the following contracts and details of transactions in relation to these contracts are reportable only upon a reasoned request of ACER and on an ad-hoc basis:

- intragroup contracts;
- contracts for the physical delivery of electricity produced by a single production unit with a capacity equal to or less than 10MW or by production units with a combined capacity equal to or less than 10MW;
- contracts for the physical delivery of natural gas produced by a single natural gas production facility with a production capacity equal to or less than 20MW; and
- contracts for balancing services in electricity and natural gas.

### B.3 EMIR

The final text of the Regulation of the European Parliament and of the Council on OTC Derivatives, Central Counterparties and Trade Repositories was published on 27 July 2012 in the Official Journal of the European Union.<sup>97</sup> The regulation is also known as the European Market Infrastructure Regulation ("EMIR").

EMIR entered into force on 16 August 2012. However, implementation has been gradual. The technical standards on various topics regarding the clearing obligation, CCP requirements and trade repositories entered into force on 15 March 2013 by Commission delegated regulation<sup>98</sup>.

EMIR introduced significant changes to the over-the-counter ("OTC") derivatives market by mandating central clearing for standardised contracts and imposing risk mitigation standards for non-centrally cleared contracts.

Whilst EMIR provides a framework for these new obligations, the precise details, which are necessary for market participants to comply with the regulation, are set out in subordinate legislation. Since 15 March 2013, a number of pieces of subordinate legislation have come into force in the form of regulatory technical standards ("RTS"), as set out in more detail below.

A list of the most recent delegated regulations and regulatory technical standards adopted by the European Commission is set out below:

- On 29 June 2017, the European Commission adopted a delegated regulation amending a previous regulatory

standards specifying the data to be published and made available by trade repositories and operational standards for aggregating, comparing and accessing data under EMIR to reflect recent developments in the area of trade reporting and access to data.<sup>99</sup>

- On 16 March 2017, the European Commission adopted a delegated regulation to prolong the phase-in period of the EMIR clearing obligation for financial counterparties with a limited volume of OTC derivatives activity. The start date for this obligation for such parties is now 21 June 2019.<sup>100</sup>
- On 2 March 2017, the European Commission adopted a delegated regulation on the list of exempted entities under EMIR which exempts central banks and public bodies charged with or intervening in the management of the public debt from Australia, Canada, Hong Kong, Mexico, Singapore and Switzerland from the clearing and reporting requirements set out in EMIR.<sup>101</sup>
- On 19 October 2016, the European Commission adopted a delegated regulation amending the minimum details of data that must be reported to trade repositories.<sup>102</sup>
- On 4 October 2016 the European Commission adopted a delegated regulation that specifies how margin should be exchanged for OTC derivatives contracts that are not cleared by a CCP. The Commission adopted the draft regulatory standards submitted by the European Supervisory Authorities with amendments.<sup>103</sup>
- On 10 June 2016, the European Commission adopted a delegated regulation that makes it mandatory for certain over-the-counter (OTC) interest rate derivative contracts to be cleared through central counterparties.<sup>104</sup>
- On 21 April 2016, the European Commission adopted a delegated regulation amending the technical standards for requirements for CCPs related to the Margin Period of Risk ("MPOR") for client accounts.<sup>105</sup>
- On 1 March 2016, the European Commission adopted a delegated regulation that makes it mandatory for certain over-the-counter (OTC) credit default derivative contracts to be cleared through central counterparties.<sup>106</sup>
- On 6 August 2015, the European Commission adopted a delegated regulation that makes it mandatory for certain over-the-counter (OTC) interest rate derivative contracts to be cleared through central counterparties.<sup>107</sup>

The following paragraphs set out the main elements of the regulation: Mandatory Central Clearing<sup>108</sup>. Financial entities will be required to clear all standardised eligible OTC derivative contracts through central counterparties ("CCPs"). The first CCP was given authorisation on 18 March 2014.

Non-financial firms are only subject to the clearing rules if their OTC derivative positions reach specified clearing thresholds, with a carve out for hedging transactions. Intragroup transactions are excluded. A third country firm that would be subject to the clearing obligation if it were established in the EU will also have to abide by the central clearing obligations for any transaction with an obligated EU entity, or for any transaction where the contract has a direct, substantial and foreseeable effect within the EU. The Regulatory Technical Standards for

third country transactions have been reported in the Official Journal and the main provisions have been applicable from 10 October 2014.

- Collateral: Parties to cleared OTC derivative contracts will need to post initial and variation margin.
- CCPs:<sup>109</sup> National competent authorities will be responsible for authorising and supervising CCPs in their jurisdiction. CCPs will be required to have established default procedures in the event of a clearing member's non-compliance with the rules, and a mutualised default fund to which members of the CCP must contribute.
- Non-Centrally Cleared OTC Derivatives:<sup>110</sup> Non-centrally cleared OTC derivative contracts will be subject to strict procedures to reduce counterparty credit risk and operational risk including the requirement for timely confirmation of terms (where possible by electronic means), robust and auditable processes for portfolio reconciliation, marking to market procedures, dispute resolution, and procedures for the accurate and appropriate exchange of collateral. Again, intragroup transactions are largely sheltered from these requirements.
- Reporting:<sup>111</sup> All counterparties and CCPs must ensure that the details of all derivative contracts, regardless of how they are cleared, are reported without duplication to trade repositories no later than the working day following the conclusion, modification or termination of a contract. The obligation is not subject to any thresholds. The obligation will extend to contracts entered into before the Regulation that are still outstanding on the date of the Regulation's entry into force. Reporting obligations may be delegated (eg, to prime brokers or asset managers). Trade repositories will publish aggregate positions by class of derivatives. Reporting failures will be met by penalties.
- ESMA: ESMA will have significant responsibility, including (a) identification or approval of contracts subject to clearing and recommendation of clearing thresholds,<sup>112</sup> (b) surveillance of trade repositories, including the grant and withdrawal of their registration,<sup>113</sup> and (c) authorisation and supervision of CCPs from third countries<sup>114</sup>.

The pieces of legislation proposed by the European Union in the form of EMIR, REMIT and MiFID II cannot be viewed in isolation, especially from the perspective of energy companies.

The legislation is designed to regulate the financial sector by increasing reporting requirements, increasing transparency and increasing the control of the regulator. This is with the aim of helping to prevent another financial crisis. Emissions trading, parts of which were previously unregulated, will now be subject to these pieces of legislation and reporting and systems requirements will increase. As a result energy companies will have to spend both time and money to ensure that they are in line with the rules as they come into force. This will include ensuring that effective systems are in place to deal with the reporting requirements and completing impact assessments to establish whether they fall above the thresholds set by the legislation.

As the directives and regulations are inter-linked energy companies will want to ensure that any systems updates cover the reporting requirements across all three pieces of legislation without any undue replication of reporting under different regimes.

### C. The EU Climate Change Package:

The Climate Change Package contains the following legislative measures:

- Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community (the "New EU ETS Directive");<sup>115</sup>
- Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduced their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020 as amended by Protocol [12012]N03/08] (the "GHG Reduction Decision");<sup>116</sup>
- Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directive 2001/77/EC and 2003/30/EC as amended by Directive 2013/18 (the "Renewable Energy Directive");<sup>117</sup>
- Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006 as amended by Directive 2011/92 (the "CCS Directive");<sup>118</sup>
- Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel, and gasoil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterway vessels and repealing Directive 93/12/EEC (the "Biofuel Directive");<sup>119</sup> and
- Regulation (EC) No 443/2009 of the European Parliament and of the Council of 23 April 2009 setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO<sub>2</sub> emissions from light-duty vehicles as amended by Regulation No 397/2013, Relation Regulation No 63/2011 (the "Emissions Standards Regulation").<sup>120</sup>

In this overview article, the key elements of the Climate Change Package are described and analysed. For a detailed analysis as to the impact the Climate Change Package is having in Member States, please refer to the relevant national chapters in this edition of EEH – the European Handbook 2015.

### C.1 New EU ETS Directive

The New EU ETS Directive amends the pre-existing version of the EU Emissions Trading Scheme, introduces a number of important changes to the EU ETS that take effect from Phase III (2013-2020) of the scheme, and provides a clearer sense of the future of the scheme. It introduces a declining emissions cap, increased auctioning of allowances and longer trading phases. In addition, the New EU ETS Directive expands the EU ETS to cover new activities and gases, including:

- CO<sub>2</sub> emissions from the petrochemicals, ammonia and aluminium sectors;
- nitrous oxide emissions from the production of nitric, adipic and glycolic acid; and
- perfluorocarbon emissions from the aluminium sector.

Although much of the attention on Phase III has surrounded its expansion, the New EU ETS Directive confirmed that the EU ETS will continue to be focused on large energy intensive sectors. Further details regarding Phase IV of the EU ETS are set out below.

The increased harmonisation and centralisation of the operation of the EU ETS is a central element of the New EU ETS Directive.<sup>121</sup> As part of this change towards a more centralised approach, the allocation of allowances has, since 2013, been made on the basis of centrally approved allocation plans rather than by Member States alone.<sup>122</sup> This represents a change from the previous practice which EU ETS participants claimed led to competitive distortions within sectors due to different allocation rules being adopted by Member States. Likewise, the administration of the New Entrant Reserve (equivalent to 5% of total annual allowances) is now centralised;<sup>123</sup> and records relating to trading in allowances are to be held in a central register. The proceeds from auctioning 300 million allowances reserved for new entrants to the EU ETS are to be used to support renewable energy projects and up to 12 CCS demonstration projects.<sup>124</sup>

Overall, the New EU ETS Directive decreases the previous EU-wide allowance cap. From 2013, the cap will decrease year on year by 1.74% of the Phase II cap from the total amount of 1.974 billion allowances in 2013 to 1.720 billion in 2020 (equivalent to an overall reduction of 21% in allowances available by 2020 compared to 2005). After 2020, the cap will have to be lowered by 2.2% to meet the 2030 targets. Allowances issued from 2013 onwards can be banked for use in any subsequent phase of the scheme.<sup>125</sup>

One major change is a shift away from allocating allowances to operators free of charge, to a process involving the compulsory auctioning of allowances. Free allocations of allowances will be phased out progressively. Article 1(11) of the New EU ETS Directive provides that, from this year, all allowances not allocated free of charge in accordance with provisions in Article 1(12) of the New EU ETS Directive are to be auctioned.<sup>126</sup>

For the electricity sector, stricter rules now apply in that no allowances are to be allocated free of charge to electricity generators as of this year (please see below for details on certain exceptions). 88% of the allowances<sup>127</sup> to be auctioned will be being given to Member States in proportion to their

verified emissions for 2005 or the average of the period from 2005 to 2007, whichever is higher. A further 10% of allowances<sup>128</sup> are to be distributed amongst certain Member States for the purpose of solidarity and growth, thereby taking account of lower GDP per head and higher prospects for growth and emissions. Another 2% of auctioned allowances are to be distributed to the nine Member States which, in 2005, had achieved greenhouse gas emissions reductions of at least 20% compared to 1990 levels.<sup>129</sup> The option available to Member States to exempt small installations has been extended to cover all small installations regardless of sector or the nature of the activity undertaken. The emissions threshold below which an installation is classified as "small" has been raised from 10,000 to 25,000 tonnes of CO<sub>2</sub> emitted per year. In addition, in the case of combustion installations, the capacity threshold has been raised from 25MW to 35MW. Member States have also been given the option of excluding hospitals from the exemptions.<sup>130</sup>

Member States may compensate certain installations for EU ETS costs passed on to them through higher electricity prices if these costs might otherwise expose them to the risk of carbon leakage.

In order to assist Member States with less developed generating infrastructure and economies, certain Member States may opt to derogate from the rule preventing the allocation of allowances to electricity generators free of charge. This option is only available where certain conditions relating to the interconnectivity of the electricity grid, the share of fossil fuels in electricity generation and GDP per capita are fulfilled. Even if the option is exercised, 30% of the allowances available for electricity generators must be auctioned in 2013, rising progressively to 100% by 2020, and the Member State must invest in energy infrastructure, clean technologies and energy diversification an amount equal to the market value of the free allocation. In addition, free allocations can only be made for emissions from installations that were operational or under construction no later than the end of 2008.<sup>131</sup>

The New EU ETS Directive contains detailed provisions as to the criteria to be used to determine sectors exposed to a significant risk of "carbon leakage" (such as the relocation of manufacturing or other activities covered by the scheme outside the EU where similar emission reduction constraints have not been imposed). The Commission was tasked with identifying those sectors facing significantly increased production costs, ie, costs comprising more than 5% of its gross value added, and international competition (more than 10% non-EU imports and exports).<sup>132</sup> The Commission has undertaken a review of carbon leakage, and has produced a list of sectors determined to be at risk.<sup>133</sup> The Commission has also determined transitional Union-wide rules for the harmonised free allocation of emission allowances.<sup>134</sup>

With regard to credits generated by Clean Development Mechanism (CDM) and Joint Implementation (JI) projects, the New EU ETS Directive envisages two scenarios.<sup>135</sup>

Generally, the New EU ETS Directive extends the ability to use credits generated by CDM and JI projects issued in respect of emission reductions occurring before 2013 or generated by projects established before 2013 into Phase III of the EU ETS.

Prior to or without a global successor agreement to the Kyoto Protocol, operators of relevant installations are able to use credits allocated to them for the period 2008 to 2012 that they have not already used.

However, in this scenario, only credits from project types which were accepted by all Member States during the 2008 to 2012 period are eligible for use, in order to guarantee that JI/CDM credits are treated equally throughout the EU ETS. Provided that the new credits do not increase the overall number of credits available, JI/CDM credits from new energy efficiency or renewable energy projects that promote sustainable development can be used in accordance with agreements concluded with third countries; and JI/CDM credits derived from new projects that start from 2013 onwards are allowed from Least Developed Countries without the need to conclude an agreement with these countries.<sup>136</sup>

Following the Paris Agreement the limit on the use of JI/CDM credits should be automatically increased by up to half of the additional reduction effort, and operators of participating installations may, in addition to the credits provided for in the New EU ETS Directive, use CERs, ERUs or other approved credits from third countries which have ratified the Paris Agreement.<sup>137</sup>

In another change from previous practice, the EU ETS has, from 2013, been extended to cover the capture, transport and storage of CO<sub>2</sub>. However, in order to support the development of CCS, operators do not need to surrender any allowances for CO<sub>2</sub> that is permanently stored in a licensed CCS facility (see section below on the CCS Directive).<sup>138</sup>

Member States were obliged to transpose the New EU ETS Directive into national law by 31 December 2012. In order to avoid any legal uncertainty, the New EU ETS Directive specifies that the relevant directives amended by the New EU ETS continued to apply until 31 December 2012.<sup>139</sup>

On 23 October 2014 the European Council published its Conclusions on 2030 Climate and Energy Policy Framework which may be seen as the commencement of Phase IV EU ETS.

On 6 October 2015 the European Parliament and the Council issued a decision, endorsing a prior EU Commission proposal, concerning the establishment and operation of a market stability reserve in order to address the issues faced by the EU ETS.<sup>140</sup> In order to make the EU ETS more resilient in relation to supply-demand imbalances a market stability reserve will be established in 2018 to be operational as of 2019. The aim is for the reserve to function by triggering adjustments to the annual auction volumes. From 2019, an amount of allowances corresponding to 12% of the number of allowances in circulation would be deducted each year from the auction volumes and placed in the reserve.

## C.2 The GHG Reduction Decision

The GHG Reduction Decision provides for binding greenhouse gas emissions targets for individual Member States for sectors of the economy not covered by the EU ETS and provides an indication of the extent to which Member States will be required to address and reduce emissions from non-EU ETS sectors

(such as surface transport, construction, and agriculture) over the next decade.

The targets for individual Member States amount to an average reduction of 10%.<sup>141</sup> This reduction, combined with the agreed 21% reduction for EU ETS sector emissions, is designed to ensure that the EU meets its current overall target of a 20% reduction in emissions by 2020.

Those Member States with lower per capita income and strong prospects for future economic growth may increase their greenhouse gas emissions by up to 20% by 2020 compared to 2005 levels, whereas Member States with higher income per capita must reduce their emissions by up to 20% by 2020. A reduction target of 16% has been set for the UK, and a reduction target of 14% has been set for Germany and France. The individual targets are the same as those proposed by the Commission when it announced the climate and energy package in January 2008, but will be revised in light of the Paris Climate Change Agreement.

In order to set a trajectory to meet the target of a 20% reduction in emissions by 2020, the GHG Reduction Decision also sets annual binding emissions limits for each Member State. Several flexibility measures are provided, allowing Member States to bank and borrow up to 5% of limits between years; transfer "overachieved" emissions reductions between Member States; and use, without limit, credits generated by emissions reduction projects within the EU.<sup>142</sup>

Pursuant to the GHG Reduction Decision, Member States which are required to reduce their emissions, or are allowed to increase them by up to 5%, may use an additional amount of CERs equal to 1% of 2005 emissions, subject to the relevant CERs stemming from CDM projects in less developed countries.<sup>143</sup> *De facto*, the only Member States likely to benefit from this measure are Austria, Finland, Denmark, Italy, Spain, Belgium, Luxembourg, Portugal, Ireland, Slovenia, Cyprus and Sweden.<sup>144</sup>

Member States already monitor and report greenhouse gas emissions annually. The GHG Reduction Decision now provides that, if a report indicates non-compliance with a limit for a given year (taking into account any use of the flexible measures or CDM/JI credits), the Member State will have to submit a corrective action plan to the Commission detailing the measures they intend to take to rectify the situation.<sup>145</sup> Further measures to deter Member States from exceeding their limits include a deduction from a Member State's emission allocation for the following year and the temporary suspension of the eligibility to transfer part of the Member State's emission allocation and JI/CDM rights to another Member State until corrective action has been taken.<sup>146</sup> The GHG Reduction Decision does not, however, include the enforcement mechanism requested by the European Parliament which would have required a Member State that fails to meet its target to pay an "excess emissions penalty" equivalent to the fines payable under the EU ETS ie, €100 per tonne of CO<sub>2</sub> emitted.

The GHG Reduction Decision is in force.

On 23 October 2014, the European Council endorsed a further target of 40% reduction on GHG from 1990 levels by 2030.<sup>147</sup> This is a collective target for the Member States which was

subsequently pledged by the European Union under the Paris Climate Change Agreement.

### The Paris Climate Change Agreement

In December 2015, 174 countries and the European Union adopted the Paris Agreement which represents a global action plan to reduce greenhouse gas (GHG) emissions and avoid the effects of climate change.

The Paris Agreement legally came into force on 4 November 2016; 30 days after the EU's ratification pushed it past the threshold to take effect. This is the first multilateral agreement on climate change covering almost all of the world's emissions and its entry into force less than a year after its adoption indicates a willingness to take action against the effects of climate change. It sets out a long term goal to put the world on track to limit global warming to below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C.

Parties to the Paris Agreement have a legally binding obligation to pursue domestic mitigation measures, with the aim of achieving the objectives of their contributions, which sends a clear signal to all stakeholders, investors, businesses, civil society and policy-makers that the global transition to clean energy is here to stay and that resources have to shift away from fossil fuels. It also sets up an enhanced transparency and accountability framework, including the biennial submission by all Parties of greenhouse gas inventories and the information necessary to track their progress, a technical expert review, a facilitative, multilateral consideration of Parties' progress and mechanism to facilitate implementation of and promote compliance.

### C.3 Changes in EU ETS

As a result of security issues relating to fraud and theft in the EU ETS market, in early 2011 the Commission took immediate steps to temporarily suspend all national registries until they fulfilled certain minimum security requirements. The Commission Regulation (EU) No 1193/2011 of 18 November 2011<sup>148</sup> (the "2011 Regulation")<sup>149</sup> introduced further and more long-term, security measures, such as the introduction of the single EU registry for the EU ETS which is to replace the national registries from 2013. The 2011 Regulation was repealed and has now been replaced by the Commission Regulation No 389/2013 of 2 May 2013 (the "2013 Regulation").<sup>150</sup> The 2011 Registries Regulation was updated so as to put in place a formal exchange mechanism to use international credits under the directly in EU ETS, see Section 6 of the 2013 Registries Regulation for these provisions.<sup>151</sup> The 2013 Regulation sets out operational and maintenance requirements (amongst others) for the Union registry for the trading period commencing 1 January 2013 and subsequent periods, as well as for the independent transaction log provided for in Article 20(1) of Directive 2003/87/EC. It also provides for the creation of a communication system between the Union registry and the independent transaction log.<sup>152</sup>

The 2013 Regulation applies to (a) EUAs created for the trading period of the EU ETS commencing on 1 January 2013 and subsequent periods, and (b) aviation allowances to be auctioned that were created for the trading period running from 1 January 2012 to 31 December 2012.<sup>153</sup>

The new measures, which were first adopted in the 2011 Regulation, are said to align the new Union registry

(implemented August 2012) with security measures generally used in the financial sector. Most provisions apply from the date that the single EU registry became fully operational. A few measures have been effective since the entry into force of the 2011 Regulation (ie, 30 November 2011), and with others having been implemented during software updates in February 2015 and September 2016. The main security measures and their applicability are summarised below.

- A 26-hour delay on EUA transfers between registry accounts, so that fraudulent trades can be spotted before the completion of the transfer (except for transfers to an account on the trusted account list of the transferor).<sup>154</sup> This delay could prove to be problematic, particularly in chain transactions (which are common in the carbon and commodity markets) as it increases the complexity of such transactions. Under the 2013 Regulation, account representatives may cancel transactions during the delay period should they suspect that the relevant transfer was initiated fraudulently, giving rise to further transaction uncertainty.<sup>155</sup>
- A new authorisation system requiring at least two people to sign off before a transfer can be made (except for transfers to an account on the trusted account list of the transferor, and transactions initiated by exempted external platforms).<sup>156</sup>
- Confidentiality in respect of the unique serial number of the EUAs or the Kyoto Protocol unit held or affected by a transaction (except as otherwise required by EU law, or proportionate national laws pursuing a legitimate objective).<sup>157</sup>
- An obligation on each Member State to designate a national administrator to access and manage its accounts.<sup>158</sup>
- The discretion of the national administrators to ban from holding an EU ETS registry account anyone who is under investigation for, is reasonably suspected of or has in fact been convicted of fraud involving EUAs, money laundering or terrorist activities in the last five years.<sup>159</sup> This is likely to mean that more extensive requirements for vetting of account holders will need to be introduced at a national level, and that contractual arrangements between traders will need to be amended to reflect these forthcoming changes.
- Access to confidential information held in the EU registry will be granted to relevant national authorities. In addition, Europol will be granted permanent read-only access to the database.<sup>160</sup>

The new security measures in the 2011 and 2013 Regulations are also important alongside other changes in the EU ETS regime. From January 2013 the system of auctioning carbon allowances has played a more prominent role. The New EU ETS Directive marks the end of free allowances for electricity production except in limited circumstances<sup>161</sup> and it is expected that these allowances will have to be procured at market price using the more transparent auction process. Free allowances are available for those industry sectors with significant risks of carbon leakage but will no longer be available for those without.<sup>162</sup>

The EU has also recently moved to address surplus of carbon allowances. Since 2009, as a result of the financial crisis, there has been a growing surplus of allowances and international credits compared to emissions. This has significantly weakened the carbon price signal.<sup>163</sup> The Commission has proposed introducing an amendment to the Directive 2003/87/EC that will allow for "backloading" of allowances.<sup>164</sup> According to the Commission, this would mean postponing the auctioning of

900 million carbon allowances from the years 2013-2015 until 2019-2020.<sup>165</sup> On 3 July 2013, the European Parliament voted to accept the Commission's proposal for backloading.<sup>166</sup>

The EU ETS is the main instrument to achieve the EU's collective GHG reduction target of 40% below 1990 levels by 2030 target. In 2015, the European Commission proposed a revision of the EU ETS directive aiming to increase the cap reduction in order to meet the 2030 GHG reduction target. This revision is currently under debate at the European Parliament (see below for further details).

#### C.4 Revision for Phase IV of EU ETS

In July 2015 the Commission presented a legislative proposal for structural reform of the EU emissions trading system for 2021 to 2030 (Phase IV) as a preliminary step in delivering the EU's target to reduce GHG emissions in the EU by at least 40% by 2030 in line with its INDC under the Paris Agreement and its 2030 climate and energy policy framework. The Commission submits that in order to meet this target the sectors covered by the ETS must reduce their emissions by 43% as compared to 2005 levels.

The key features of the Commission's proposal include:

- **The Reduction of Free Allocations**  
The Commission proposed that Phase IV should be split into two five-year phases to allow for allocation and benchmarking figures to be re-evaluated after the first five years. It is intended that this will enable the free allocation process to adjust to technological advances and changing production levels more flexibly. The proposed revisions should result in a 2.2% decline in the overall quantity of allowances every year starting from 2021.
- **More Robust Rules to Guard Against the Risk of Carbon Leakage**  
The Commission proposed that the system of free allocation should be revised to focus on sectors at highest risk of relocating their production outside the EU (at highest risk of carbon leakage) – around 50 sectors in total. Under current carbon leakage rules, 180 sectors get 100% of their European Union allowances (EUAs) for free, the remaining sectors deemed to be below the highest risk receive only 30% of their benchmark values for free. This indicates that many sectors are likely to face increased costs in Phase 4. The Commission also proposes that a considerable number of free allowances set aside for new and growing installations, and rules should be more flexible rules to better align the amount of free allowances with production figures.
- **Benchmarking values should be reset**  
Free allocation is based on benchmark values of the most efficient installations within the industry sector and they are currently calculated on data from 2007-2008. The Commission proposes that benchmarks should be updated to reflect technological advances since 2008. In doing so, the benchmarking values should be reset in 2021 and re-evaluated in 2025 with the second set of rules to apply from 2026.
- **Phase III unallocated allowances will go to the Market Stability Reserve**  
All unallocated Phase III allowances will be transferred to the market Stability reserve except 50 million tonnes used to seed the Innovation Fund. This is a deviation from what was thought to be the original plan to auction unallocated allowances at the end of Phase III.

- **Funding for low-carbon Innovation and Energy Sector Modernisation**

An Innovation fund will be set up to help industry and power sectors to tackle the innovation and investment challenges of transition to a low-carbon economy. The Innovation fund will extend existing support for the demonstration of innovative technologies to breakthrough innovation industry in renewable energy, carbon capture and storage and low-carbon innovation. 400 million allowances which would amount to approximately €10 billion when sold will be reserved for this purpose from 2021 onwards. Additionally, 50 million of unallocated allowances from 2013-2020 will be used to enable the Innovation Fund to start before 2021. This proposed fund builds on the NER 300 – the existing fund programme created to support low-carbon innovation using the proceeds from 300 allowances during 2013-2020. The Commission also proposed the creation of the Modernisation Fund to support 10 lower-income Member States by facilitating investments to modernise the power sector and wider energy systems resulting in energy efficiency gains. Accordingly, between 2021 and 2030, 2% of allowances (approximately 310 allowances in total) will be set aside to establish the fund with all Member States contributing to the fund. The countries eligible to receive funding have a GDP per capita of less than 60% of the EU average (in 2013) including Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia. The Commission recommends that the ETS directive should set up a governance structure for the Modernisation Fund involving Member States, the European Investment Bank and the Commission.

- **Creation of a reserve for new and growing installations**

This proposal follows the adoption of the Market Stability Reserve for the EU ETS in September 2015. In 2013 there was a significant surplus in allowances which was expected to increase in following years, resulting in an imbalance in the supply and demand of allowances. This surplus in allowances causes a decline in prices for allowances effectively reducing incentives for low-carbon investment. In order to address this issue, unallocated allowances will be transferred to the MSR in 2020. Following this decision, the Commission's recent proposal of for Phase 4 EU ETS includes a recommendation that 250 million unallocated allowances from 2013 – 2020 be transferred to establish a reserve for new and growing installations.

#### C.5 The Renewable Energy Directive

The Renewable Energy Directive promotes the use of renewable sources for electricity generation and sets a target for energy from renewables of 20% of total energy consumption across the EU by 2020, including a further target of 10% for energy from renewable sources for each Member State's transport energy consumption.

In order to achieve the overall targets, the Renewable Energy Directive sets a mandatory national target for each Member State stating the overall share of gross energy consumption that must come from renewable energy sources, taking the differing levels of progress achieved by Member States to date into account.<sup>167</sup> The mandatory national targets provide certainty for investors and should encourage technological development. To ensure that the mandatory national targets are achieved, Member States are required to follow an indicative trajectory towards the achievement of their target and each is required to produce a National Action Plan. The plan sets national targets

for the share of energy from renewable sources to be used to meet demands for transport, electricity, heating and cooling in 2020. Member States are free to decide their preferred mix of renewable sources, but were required to present National Action Plans, based on an "indicative trajectory", to the Commission by 30 June 2010.<sup>168</sup> Progress reports are required to be submitted every two years. The plans need to be split so that three sectors are identified separately, namely: electricity, heating and cooling, and transport.<sup>169</sup> The findings from the latest EU-wide report in 2015 included the following highlights<sup>170</sup>:

- 25 EU countries were expected to meet their 2013/2014 interim renewable energy targets
- In 2014, the projected share of renewable energy in the gross final energy consumption was 15.3%
- The EU's 2020 renewables target has resulted in around 326 Mt of avoided CO<sub>2</sub> emissions in 2012, rising to 388 Mt in 2013
- The EU's demand for fossil fuels has been reduced by 116 Mtoe (2013 figure)
- The 2014 projected share of renewable energy in transport was 5.7%

Member States can apply financial support schemes in relation to the mandatory targets, although it will not be mandatory to link these with schemes in other Member States. The Renewable Energy Directive also lays down rules relating to statistical transfers<sup>171</sup> between Member States, joint projects between Member States and with non-EU countries<sup>172</sup>, Guarantees of Origin,<sup>173</sup> administrative procedures,<sup>174</sup> information and training,<sup>175</sup> and access to the electricity grid for energy from renewable sources<sup>176</sup>.

The Renewable Energy Directive contains interim targets for all Member States, in order to ensure steady and measurable progress towards the 2020 targets:<sup>177</sup>

- 30% of the overall 2020 target to be achieved between 2013 and 2014;
- 45% of the overall 2020 target to be achieved between 2015 and 2016; and
- 65% of the overall 2020 target to be achieved between 2017 and 2018.

Whilst there are no financial penalties imposed in relation to any failure in achieving the above targets, the Commission may issue infringement proceedings if Member States do not take "appropriate measures" to try and meet their targets.

Member States can:

- cooperate on joint projects renewable energy projects;<sup>178</sup>
- work with non-EU countries on renewable electricity generation projects;<sup>179</sup>
- link their national support schemes<sup>180</sup> to those of other Member States; and,
- under certain circumstances, count the import of "physical"<sup>181</sup> renewable energy from third-country sources towards their targets.

It may, under certain circumstances, be possible to count "virtual" imports, based on investments in non-EU countries towards a Member State national target.<sup>182</sup>

A system requiring open trading in renewable energy certificates between participants across Member States was rejected in favour of a system only permitting Member States themselves to transfer excess renewable energy credits. These "statistical transfers" can only take place if the Member State has reached its interim renewable energy targets.

The Renewable Energy Directive states that Guarantees of Origin in relation to renewable energy are only to be used to prove the quantity of energy from renewable sources in a supplier's energy mix to final consumers. Member States must ensure that a Guarantee of Origin is issued in response to a request from a generator of renewable electricity and that guarantees are given in relation to each 1MWh generated.<sup>183</sup>

In addition, the Renewable Energy Directive establishes binding criteria to ensure that biofuel and bioliquid production are environmentally sustainable. For the purposes of meeting national targets, energy from these sources must fulfil the requisite criteria. The criteria relate to biodiversity, the protection of rare, threatened or endangered species and ecosystems, and greenhouse gas emissions savings.<sup>184</sup>

After 2017, any greenhouse gas emissions savings resulting from the use of biofuel produced in existing biofuel production plants must at least amount to 50% compared with the emissions from using fossil fuels<sup>185</sup>, whereas greenhouse gas emissions from the use of biofuel produced in new installations (ie, those installations which commence production after 1 January 2017) must be at least 60% lower than those from fossil fuels. Unlike traditional, "first-generation" biofuel, it is thought that second-generation biofuels do not present the same risks to the security of food supplies as these biofuels are, for example, produced from wastes, residues, or biomass such as algae, wood residues, or paper waste.

In the past, many smaller producers of renewable electricity have argued that a lack of transparency and restricted access to electricity grids has prevented them from competing in the market. The directive requires Member States to ensure that transmission and distribution system operators provide either priority access or guaranteed access to the grid for electricity produced from renewable energy sources.<sup>186</sup> System operators are required to provide any new generator wishing to be connected to their network with a timetable and a comprehensive estimate of costs associated with the connection<sup>187</sup>. Member States are also obligated to develop transmission and distribution grid infrastructure, intelligent networks, storage facilities and systems that can be operated safely while accommodating renewable generation.<sup>188</sup>

In their National Action Plans, Member States are required to assess whether there is a need to build new district infrastructure for heating and cooling using energy produced from renewable sources (including large biomass, solar and geothermal facilities) in order to achieve their mandatory 2020 national target.<sup>189</sup> Local and regional administrative bodies should be advised to "ensure equipment and systems are installed for the use of heating, cooling and electricity from renewable sources, and for district heating and cooling when

planning, designing, building and refurbishing industrial or residential areas". In particular, they should be encouraged to include heating and cooling systems when planning city infrastructures.<sup>190</sup>

Member States were required to have transposed the Renewable Energy Directive by 5 December 2010.<sup>191</sup>

On 17 October 2012, the Commission published a proposal to amend the Renewable Energy Directive so as to limit global land conversion for biofuel production, and raise the climate benefits of biofuels used in the EU. This proposal has been in force as a directive since 9 September 2015.<sup>192</sup> This directive limits the way Member States can meet the target of 10% for renewables in transport fuels by 2020, introducing a cap of 7% on the contribution of biofuels produced from 'food' crops. Member States must implement the directive into national law by mid-2017, and show how they are going to meet sub-targets for advanced biofuels. The remaining 3% target for renewables in transport fuels may come from a range of alternatives:

- Biofuels from Used Cooking Oil and Animal Fats (counted double)
- Renewable electricity in rail (counted 2.5 times)
- Renewable electricity in electric vehicles (counted 5 times)
- Advanced biofuels (counted double)
- Benchmark for the share of advanced biofuels in the transport sector of 0.5%

## C.6 The CCS Directive

The climate change and renewable energy package includes a directive which provides a framework for carbon capture and storage in the EU (the CCS Directive) supporting CCS as an emissions reduction option.

The key provisions of the CCS Directive are:

- the creation of a permit-based CCS storage regime to be administered by Member States and the amendment of existing EU legislation which prohibits or inhibits CCS;<sup>193</sup>
- the establishment of a regime for operators holding permits to pass long-term liability for leakage from storage sites to the licensing Member State, provided certain hand-over criteria are met;<sup>194</sup> and
- requirements for all new combustion plants in the EU built without CCS to have space for CCS equipment and to have carried out studies into the availability of storage sites and the feasibility of "retro-fitting" capture equipment.<sup>195</sup>

By joining up the funding mechanism under the New EU ETS Directive and the provisions of the CCS Directive, the Climate Change Package provides that CCS is financially incentivised through the EU ETS from Phase III (2013 – 2020) and Member States can opt-in for the inclusion of CCS in Phase II (2008 – 2012) (see section on the New EU ETS Directive above). The inclusion of CCS in the EU ETS combined with the allocation of up to 300 million EU ETS allowances from the new entrant reserve have allowed the EU to fund up to 12 CCS demonstration projects.<sup>196</sup> Practically, support for such projects is to be provided via Member States and the mechanics of how and when such support will be made available are currently unclear.

As a result of the CCS Directive, CO<sub>2</sub> stored in geological formations is not to be classed as "emitted" for the purposes of the EU ETS so that credit is given to power stations with CCS technology which are not to be required to surrender allowances for CO<sub>2</sub> which is stored.

Under the CCS Directive there are two types of permit. Firstly an exploration permit which permits certain specified exploration works to be carried out and entitles the permit holder, on an exclusive basis, to explore within the area covers by the permit for appropriate geological formations.<sup>197</sup> Secondly a storage permit which relates to the development and utilisation of geological formations contained in the permit area as storage sites for CO<sub>2</sub>, and permits the injection of CO<sub>2</sub> to such formations.<sup>198</sup>

The criteria for the grant of a storage permit are rigorous and involve substantial site characterisation in order to assess its suitability for permanent storage. Applicants must also satisfy technical and financial requirements. As well as delineating the storage complex, storage permits are to contain a number of important provisions including the requirements for operating the storage facility, the total quantity of CO<sub>2</sub> to be stored, the requirements with regard to the composition of the CO<sub>2</sub> stream and an approved monitoring plan.<sup>199</sup>

Permits are to be issued by the competent authority in each Member State. However, the Commission proposes to review and comment on each individual storage permit application before it is awarded and Member States are obliged to take the Commission's comments into consideration.<sup>200</sup>

The CCS Directive also deals with issues relating to liability for damage from CO<sub>2</sub> leaks from storage sites. The Directive contains specific provisions both in respect of damage to the local environment and the climate. With regard to the former, the CCS Directive applies the Environmental Liability Directive (2004/35/EC) to the storage of CO<sub>2</sub> which aims to ensure that any operator of a storage facility prevents and remedies any damage caused by CO<sub>2</sub> leakage.<sup>201</sup> Liability for climate damage resulting from leakage is covered by the inclusion of CCS in the revised EU ETS Directive so that EU ETS allowances need to be surrendered for leaked emissions.<sup>202</sup>

The CCS Directive requires the storage operator to take corrective measures to remedy any leakage, and the storage operator remains responsible for the storage site for as long as it represents a risk (even after closure), until the site is handed over to the competent authority of the relevant Member State.<sup>203</sup> The relevant Member State is required to assume responsibility for storage sites in its territory from the point of handover.<sup>204</sup> Once a handover has occurred, subject to an important caveat, there should be no further liability for the operator.

The CCS Directive contains a provision stating that where there is fault on the part of the operator, including deficiencies in data, concealment of relevant information, negligence, wilful deceit or a failure to exercise due diligence, the competent authority may recover the costs incurred from the operator, even after the transfer of responsibility has taken place.<sup>205</sup> This is a broad derogation from the principle of liability handover. How this is translated into national legislation will be of great interest to operators of storage facilities.

As part of the permitting regime, Member States may require operators to lodge financial security for their prospective liabilities before the injection of CO<sub>2</sub> into a storage facility commences.<sup>206</sup> The scope of these liabilities and the form that the security will take is a matter for individual Member States to decide and will no doubt come under scrutiny when the CCS Directive is implemented at national level. In addition, Member States are entitled to require a contribution from the operator to cover future liabilities as a condition of the handover of responsibility. Member States are permitted to set the level of this contribution subject to a minimum of not less than the cost of monitoring the site for 30 years post-closure.<sup>207</sup>

Whilst stopping short of compulsory CCS for new power plants, there are requirements on the operators of all new combustion plants in the EU with a capacity in excess of 300MW which are built without CCS capabilities to have assessed whether suitable storage sites are available, whether transport facilities are technically and economically feasible and whether it is technically and economically feasible to retrofit the plant for CO<sub>2</sub> capture. The relevant competent authority in the Member State should also ensure that the operator has secured suitable space on the site for the installation of equipment necessary to capture and compress CO<sub>2</sub>.<sup>208</sup>

By amending directives relating to the waste and ground water to permit to permit the injection of CO<sub>2</sub> into storage sites, the Climate Change Package removes a significant part of the current prohibitions on CCS under EU legislation.

In addition to the financing support mechanisms in the CCS Directive, financial support for carbon capture and storage is also forthcoming under the European recovery plan.<sup>209</sup> On 20 March 2009, EU leaders agreed proposals for €5 billion of investment in energy and broadband infrastructure projects as part of the European Energy Programme for Recovery (EPR)<sup>210</sup> EU recovery plan. The €5 billion came entirely from unspent money in the EU budget. Under the plan Germany, the UK, Poland, the Netherlands and Spain were to receive €180 million each, Italy was to receive €100 million and France €50 million.

In June 2008 the European Council, asked the Commission to propose as soon as possible an incentive mechanism for Member States and the private sector to ensure the construction and operation of up to 12 CCS demonstration plants by 2015 to contribute to mitigation of climate change. This target was not been reached and there are only two large scale CCS plants operating in Europe (both in Norway). Originally, 13 projects were shortlisted as funding candidates, among them Hatfield, Kingsnorth, Longannet and Tilbury in the UK, Eemshaven and Rotterdam in the Netherlands and Hürth and Jämschwalde in Germany.

Member States were required to transpose the CCS Directive into national law by 25 June 2011. There were as many as 26 Member States in breach of the transposition requirements when the deadline fell but as of 24 July 2014 only three Member States are yet to have completed transposition.<sup>211</sup>

Little has changed since the EU CCS Network Situation Report 2013/14 was released. The projects have experienced delays. The UK Peterhead CCS project was added to the list above but subsequently terminated due to the cancellation of the UK CCS

Commercialisation Competition. Currently only two projects – the ROAD project in the Netherlands and Don Valley in the United Kingdom are ongoing with a total of four projects at the planning stage in the EU, which could be operational around 2020. Once operational, these projects would complement the current two Norwegian commercial projects.

A report dated 18 November 2015 from the EU Commission to the EU Parliament concludes that despite the limited information and practical application, the CCS Directive seems fit for purpose, however the rate of progress with large-scale CCS in Europe is much slower than expected.<sup>212</sup>

### C.7 The Biofuel Directive

The measures introduced by the Biofuel Directive have provided a significant boost to the European biofuel market.

The Biofuel Directive introduces amendments to two previous European directives relating to the quality of petrol and diesel (Directive 98/70/EC of the European Parliament and Council relating to the quality of petrol and diesel fuels as amended by Directive 2003/17/EC). The changes provide for a mechanism for the reporting<sup>213</sup> of and reduction in the life cycle of greenhouse gas emissions from fuel; enable the more widespread use of ethanol in petrol; and tighten environmental quality standards for specified fuel parameters.<sup>214</sup>

The Biofuel Directive obliges fossil fuel suppliers to reduce greenhouse gas emissions from their fuels throughout their life-cycle by 6%, a reduction from the Commission's initial proposal for a binding 10% reduction. Member States may also require suppliers to comply with intermediate targets (a 2% reduction by the end of 2014 and a 4% reduction by the end of 2017).<sup>215</sup> The use of Certified Emissions Reductions obtained from projects related to flaring reductions is expected to produce a further 2% reduction which will not be linked to EU oil consumption.

Perhaps the most significant change brought about by the Biofuel Directive is the increase in the permissible content of biological components of petrol to up to 10% by the phasing in of 10% Ethanol (E10) petrol. Petrol meeting the pre-existing requirements (containing up to 5% by volume of ethanol) was permitted to be marketed until 2013. This transitional period was introduced to mitigate the potential damage that would be caused to vehicles which were not calibrated or covered by a warranty allowing the use of petrol with an ethanol content of over 5% by volume.<sup>216</sup> In addition, Article 3(3) gives flexibility to Member States to place such petrol on the market for a longer time if deemed necessary: "Member States shall require suppliers to ensure the placing on the market of petrol with a maximum oxygen content of 2.7% and a maximum ethanol content of 5% until 2013 and may require the placing on the market of such petrol for a longer period if they consider it necessary. They shall ensure the provision of appropriate information to consumers concerning the biofuel content of petrol and, in particular, on the appropriate use of different blends of petrol."

There are also changes to current diesel specifications. Under the Biofuel Directive the content of fatty acid methyl ester (FAME) in diesel is permitted up to 7% by volume and for other advanced biodiesel blends there is no restriction at all in the

conventional diesel specification. Although allowances are made for Member States that want to make biodiesel blends with a FAME content of 10% by volume available, as a result of the new specification, diesel constituting up to 7% by volume of FAME (B7) is likely to be the grade of diesel predominately available on the European market.<sup>217</sup>

European legislators intend the Biofuel Directive to incorporate sustainability criteria for biofuel used to meet greenhouse gas reduction requirements. Despite criteria being set out in the Renewable Energy Directive, these criteria had not been agreed by the time that the package was adopted. The European Commission has been tasked with developing a methodology to assess the environmental impact of biofuel across their life-cycle, and produced a report to this effect in January 2011.<sup>218</sup> A second report was issued in February 2013 which focuses in particular on the impact in developing countries.<sup>219</sup>

Member States had until 31 December 2010 to transpose the Biofuel Directive into national law.<sup>220</sup> The Biofuel Directive has had a significant impact on fuel suppliers throughout the distribution chain as well as fuel producers, who more so than other affected parties, have had to adapt to meet the new quality criteria.

As discussed above, the 2015 directive on the quality of petrol and diesel fuels introduces a cap of 7% on the contribution of biofuels produced from 'food' crops. Member States must implement the directive into national law by mid-2017, and show how they are going to meet sub-targets for advanced biofuels.

### C.8 The Emissions Standards Regulation

Despite improvements in fuel efficiency, CO<sub>2</sub> emissions from road transport across the EU increased by 26% between 1990 and 2004, and now account for almost a third of the EU's total emissions. When it became apparent that voluntary car industry reduction targets would not be met, the European Commission proposed new legislation to impose enhanced emissions performance requirements.

The Emissions Standards Regulation sets the first legally binding standards for CO<sub>2</sub> emissions from passenger cars. This Regulation promotes the adoption of improvements in technology in the sector in order to meet requirements to reduce, from current levels, to 130g of CO<sub>2</sub> per km travelled (as an EU average for new cars). Additional measures are also promulgated to achieve a further 10g per km which include the increased use of sustainable biofuel and increase efficiencies from technology such as improved air-conditioning systems and tyres. The Emissions Standards Regulation was amended by Regulation 397/2013<sup>221</sup> which replaced Annex II in the Emissions Standards Regulation on monitoring and reporting of emissions.

The Emissions Standards Regulation is much less demanding than the European Commission's original proposal, which had sought to impose significant financial penalties for missing targets that would have applied in full from 2012. The car industry argued strongly that lead-in times for new car development would have made complying with the proposed targets within this timeframe impossible.

Additional credit<sup>222</sup> will be given for very low emission vehicles, and in certain circumstances for biofuel-capable cars, until 2016. The target for each manufacturer will be set by reference to a limit value curve, with manufacturers of heavier cars being allowed higher emissions than those of smaller cars, but also being required to make steeper cuts from current fleet average emission levels.<sup>223</sup>

Manufacturers (including companies within the same manufacturing group) may agree to pool together to meet the emissions targets.<sup>224</sup> In that case, a nominated pool manager is responsible for paying any penalties, and evidence must be provided that it is sufficiently financially robust to do so. In order to discourage cartel behaviour amongst pool members that are not part of the same group of companies, pools must allow open, transparent and non-discriminatory participation on commercially reasonable terms, and the usual anti-competition rules apply. Pool members are not allowed to share information (eg, on pricing or research developments) other than that which directly relates to compliance with their targets. This does not preclude collaboration agreements which are unconnected with the pooling agreement and do not otherwise violate applicable laws or regulations.<sup>225</sup>

Small-scale manufacturers (registering fewer than 10,000 cars per year) and niche manufacturers (registering fewer than 300,000 cars per year) may benefit from lower targets. Small-scale manufacturers may put forward a reduction target consistent with their reduction potential in light of economic, technological and market considerations, but such reduced targets are only available for a maximum of five years, whereas niche manufacturers, instead of having a target set by reference to the limit curve, are able to apply for a lower target of a reduction of 25% from 2007 emission performance levels. These lower targets were required to be achieved by 2012.<sup>226</sup>

Manufacturers may seek to gain credit of up to 7g of CO<sub>2</sub>/km travelled for eco-innovations shown to improve CO<sub>2</sub> emissions performance, provided the improvements go beyond what is otherwise required by the regulation. However, over time, eco-innovations (and in particular reductions in car weight) will be subsumed into required standards and no extra credit will be given.<sup>227</sup>

The Emissions Standards Regulation's penalty scheme was also amended from the original proposal to ensure that manufacturers who only miss the target by a small margin are less severely penalised. The fines will now be:

- €5/g per new car registered for the first g/km over target;
- €15 for the second g/km over target;
- €25 for the third g/km; and
- €95 for each gram above three grams until 2019.

From 2019 the full penalty of €95 for each g/km over the target will apply.<sup>228</sup>

From 2011 onwards manufacturers have been notified by the Commission of any shortfall in meeting their targets for the previous year. Inaccuracies can be challenged and the notice will be confirmed by 31 October of the relevant year. Details of each manufacturer's performance are also published.<sup>229</sup>

A longer-term target of 95 grams of CO<sub>2</sub> per kilometre travelled by 2020 is also specified in the Emissions Standards Regulation. Mechanisms for meeting this goal and penalties for missing it will be set following a review of the regulation which will be completed by 1 January 2013. That review must encompass a review of all targets applying from 2012 and the small-scale manufacturer and niche market derogations. It must also include an overall assessment of the impact of the regulation on the car industry and dependent industries such as parts providers.<sup>230</sup> The Commission proposed a regulation amending the Emissions Standards Regulation on 11 July 2012 that would, from 2020 onwards, have set a target of 95g CO<sub>2</sub>/km as average emissions.<sup>231</sup> In June 2013, however, this proposal was blocked.<sup>232</sup> At time of writing, no new date has been set for the policy to be approved.

The Emissions Standards Regulation has already entered into force and is directly applicable in all EU Member States, although its measures will be introduced gradually until 2016.

Following from the Emissions Standards Regulation and Volkswagen's admission of using software to cause its car engines to behave differently during emissions tests compared to real world driving, the new Real-Driving Emissions Regulation has been proposed by the Commission.<sup>233</sup>

On 28 October 2015 the Technical Committee for Motor Vehicles (TCMV) voted in favour of the adoption of the second package of rules to introduce a new real driving emission (RDE) test conducted using on-board portable emissions measurement systems (PEMS). The RDE test procedure will start from January 2017 and is intended to measure more accurately pollutant emissions from cars and other light vehicles. On 12 February 2016 the EU Council voted in favour of the Commission's proposal for the Real-Driving Emissions regulation introducing a second package of RDE tests.<sup>234</sup>

### C.9 The way ahead for Europe's climate change regime

Taken as a whole, the Climate Change Package is the EU's first attempt to create a comprehensive European legal regime covering the carbon and renewable energy sectors, helping to inform investment decisions in these sectors, by securing a future for carbon trading and laying the foundations for future investment in renewable technologies, biofuel and the development of carbon capture and storage.

At policy level, the Climate Change Package aims to achieve a reduction of at least 20% in the levels of greenhouse gas emissions by 2020; rising to 30% under the EU's commitments under the Paris Agreement and committing other developed countries to comparable emission reductions and economically more advanced developing countries to contributing adequately according to their responsibilities and respective capabilities; and a 20% share of EU energy consumption to be generated from renewable sources by 2020.

The original Climate Change Package has significantly accelerated the transition of the EU Member States economies to reduce their carbon footprint. With the EU's sights on 2030 and further cuts in greenhouse gas emissions the EU is well placed to drive forward ambitious cuts in global emissions and to reap the rewards through stimulating technological developments and new technologies.

## D. Energy efficiency

The improvement of energy efficiency in the EU is another element of the EU's Europe 2020 Strategy for smart, sustainable and inclusive growth and the transition to a resource efficient economy. The European Council's target of at least 27% energy efficiency savings in 2030 will be reviewed in 2020 with the aim of adjusting it upwards to an EU level of 30%.

In pursuit of this goal, the Commission seeks to increase finance instruments to facilitate increased investment in energy efficiency in relation to building renovation across Europe, including retrofitting existing buildings making them more energy efficient, and making full use of sustainable space heating and cooling will reduce the EU's energy costs. Significantly, in April 2016 the Vice-President for Energy Union Maroš Šefčovič indicated that the European Commission would present a new Smart Financing for Smart Building initiative in the autumn, alongside revisions to the Energy Efficiency Directive and began pushing for new public financing instruments to generate a wave of building renovation in Europe during his Energy Union tour in 2015. The EU budget for 2014-2020 significantly increased the contribution to building and renovation. Furthermore, in February 2016 the Commissions released a proposal of a Heating and Cooling strategy to move towards a smarter, more efficient and sustainable heating and cooling sector.

Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (the "Energy Efficiency Directive")<sup>235</sup> establishes a common framework of measures for the promotion of energy efficiency within the Union in order to ensure the achievement of the Union's 2020 20% headline target on energy efficiency and to pave the way for further energy efficiency improvements beyond that date. It lays down rules designed to remove barriers in the energy market and overcome market failures that impede efficiency in the supply and use of energy, and provides for the establishment of indicative national energy efficiency targets for 2020.<sup>236</sup>

The Energy Efficiency Directive requires Member States to set energy efficiency targets that take into account the EU's 2020 energy consumption targets.<sup>237</sup> Articles 24(1) and 24(2) of the Energy Efficiency Directive require Member States to issue reports on progress made towards achieving national energy efficiency targets and National Energy Efficiency Action Plans. As required in Article 24(11), the Commission then makes the reports publicly available.<sup>238</sup>

## E. Upstream

Directive 94/22/EC of the European Parliament and of the Council of 30 May 1994 on the conditions for granting and using authorizations for the prospection, exploration and production of hydrocarbons (the "Hydrocarbons Licensing Directive")<sup>239</sup> concerns conditions imposed on the grant and use of authorisations for the prospection, exploration and production of hydrocarbons.

Generally Member States have sovereign rights over hydrocarbon resources located within their territories. It is up to each Member State to determine the precise geographical areas where the rights to prospect, explore and produce hydrocarbons may be

exercised. It is also the Member States' responsibility to authorise particular entities to exercise such rights.<sup>240</sup>

The introduction of the Hydrocarbons Licensing Directive was aimed at reinforcing the integration of the internal energy market, encouraging greater competition within the market and improving the security of supply. The Hydrocarbons Licensing Directive has achieved its aims by establishing a set of common rules which guarantee fair, non-discriminatory access to rights of prospection, exploration and production of hydrocarbons.

The Hydrocarbons Licensing Directive provides that there must be limits to the geographical area and duration of an authorisation. These limits must be proportionate and should be determined based on what is justified to ensure the best possible exercise of the rights granted, taking into account both economic and technical factors.<sup>241</sup> The aim of this is to prevent any single entity from having exclusive rights to an area where the prospection, exploration and production could be more effectively carried out by several entities. The provisions which reserve the right to obtain authorisations for single entity for a specific geographical area within the territory of a Member State were abolished in 1997 by Member States concerned.

According to the Hydrocarbons Licensing Directive, the procedures for granting authorisations must be transparent and based on objective and non-discriminatory criteria.<sup>242</sup> The application process must be open to any interested entities.<sup>243</sup> Selection from among the various entities must be based on criteria relating to their technical and financial capabilities, the way in which they propose to prospect, explore and/or bring into production the hydrocarbons from the geographical area in question and, if the authorisation is put up for sale, the price which the entity is prepared to pay in order to obtain the authorisation.

All the information relating to the authorisation (type of authorisation, geographical area which may be applied for in whole or in part, deadline envisaged for granting the authorisation, selection criteria, etc.) should be published in the Official Journal of the European Union at least 90 days before the deadline for the submission of applications.<sup>244</sup>

The Hydrocarbons Licensing Directive provides the Member States with the right to make access available to these hydrocarbon resources by granting rights but Member States may impose requirements further to considerations of national security, public safety, public health, security of transport, protection of the environment, protection of biological resources, the planned management of hydrocarbon resources or to the payment of a financial contribution or a contribution in hydrocarbons.<sup>245</sup>

The Hydrocarbons Licensing Directive also introduces principles of reciprocity with countries outside the EU. The entities of a particular Member State must receive treatment in third countries which is comparable to that which the entities of third countries receive in the Community.<sup>246</sup>

The Member States are required to provide an annual report containing information<sup>247</sup> on the geographical areas which have been opened, the authorisations granted, the entities holding those authorisations and the available reserves in their territory.

Directive 2004/17/EC<sup>248</sup> runs concurrently with the Hydrocarbons Licensing Directive and regulates the procurement procedures of entities operating in the water, energy, transport and telecommunications sectors.<sup>249</sup>

**Directive 2013/30/EU of the European Parliament and of the Council of 12 June 2013 on safety of offshore oil and gas operations and amending Directive 2004/35/EC ("The Offshore Safety Directive"<sup>250</sup>)**

In March 2013, following lengthy negotiation, the European Commission, Council and European Parliament reached political agreement on a new directive seeking to address the risk of major accidents from offshore oil and gas operations in EU waters. The directive entered into force on 19 July 2013.

The Offshore Safety Directive will apply to existing and future installations and operations. There are provisions limiting its applicability to landlocked Member States and Member States with no offshore activities. The main features of the Offshore Safety Directive include:<sup>251</sup>

- provisions establishing minimum conditions for safe offshore oil and gas operations<sup>252</sup> including the submission by operators of a major hazards report prior to commencement of offshore operations;<sup>253</sup>
- provisions improving the response mechanism for accidents and requiring operators to include emergency plans<sup>254</sup> as well as an assessment of "oil spill response effectiveness";<sup>255</sup>
- the requirement that oil and gas operations only be conducted by operators appointed by licensees or licensing authorities;<sup>256</sup>
- provisions imposing financial liability for environmental damage on licence holders (not operators)<sup>257</sup> and extending area of liability for all damage from territorial waters of the Member State to the entire continental shelf area;<sup>258</sup>
- provisions ensuring the independence and objectivity of the competent authority - Member States must ensure a clear separation between regulatory/environmental functions on the one hand and economic functions on the other so to avoid conflicts of interest;<sup>259</sup>
- the requirement that licensing authorities consider whether potential licensees have adequate provision for liabilities potentially deriving from operations;<sup>260</sup>
- rules on transparency and sharing of information;<sup>261</sup> and
- cooperation between Member States with regard to emergency response plans and trans-boundary emergency preparedness and response.<sup>262</sup>

No later than 19 July 2019, the Commission will submit a report to the European Parliament and Council assessing implementation of the directive.<sup>263</sup>

Member states with offshore waters will have two years to transpose the directive into national legislation, while a landlocked country will only have to transpose it once a company registers in such a country and conducts operations outside of the Union.<sup>264</sup>

The Offshore Safety Directive does not require mandatory financial security to be provided (as was strongly requested by the European Parliament). However, it obliges the Commission to report by 31 December 2014 on the availability of such instruments as well as on the handling of claims for third party compensation for damage caused by oil and gas operations.<sup>265</sup>

In 2015, the European Commission published a report on liability and compensation in the case of offshore accidents in Europe. It finds that the effects of the Offshore Safety Directive will, by the time of its first implementation report, demonstrate whether it is appropriate to bring certain conduct leading to major offshore accidents within the scope of criminal law. However, European Commission report states that at this point broadening liability provisions through EU legislation does not appear appropriate.<sup>266</sup>

## Endnotes

1. Council Regulation (EC) No 1/2003 of 16 December 2002 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty (OJ L 1 of 4.1.2003, p.1), as amended by Council Regulation (EC) No 411/2004 (OJ L 68 of 6.3.2004, p. 1), Council Regulation (EC) No 1419/2006 (OJ L 269 of 25.09.2006, p.1), Council Regulation (EC) No 169/2009 (OJ L 61 of 05.03.2009, p.1), Council Regulation (EC) No 246/2009 (OJ L 79 of 26.02.2009, p.1) and Council Regulation (EC) No 487/2009 (OJ L 14825.02.2009, p.1)
2. OJ L 211 of 14.08.2009, p. 55
3. OJ L 211 of 14.08.2009, p. 94
4. OJ L 211 of 14.08.2009, p. 1
5. OJ L 211 of 14.08.2009, p. 15
6. OJ L 211 of 14.08.2009, p. 36
7. The unbundling provisions are contained in Articles 9 to 11 and 13 to 14 Third Electricity Directive and Articles 9 to 11 and 14 Third Gas Directive.
8. Articles 9 in the Third Electricity Directive and Third Gas Directive, respectively.
9. See Commission Decision in relation to Scotland, last accessed on 25 July 2013 at [http://ec.europa.eu/energy/gas\\_electricity/interpretative\\_notes/doc/certification/2012\\_019\\_020\\_uk\\_en.pdf](http://ec.europa.eu/energy/gas_electricity/interpretative_notes/doc/certification/2012_019_020_uk_en.pdf)
10. Commission Staff Working Document on Ownership Unbundling: "The Commission's Practice in Assessing the Presence of a Conflict of Interest Including in Case of Financial Investors" last accessed on 25 June 2013 at [http://ec.europa.eu/energy/gas\\_electricity/interpretative\\_notes/doc/implementation\\_notes/swd\\_2013\\_0177\\_en.pdf](http://ec.europa.eu/energy/gas_electricity/interpretative_notes/doc/implementation_notes/swd_2013_0177_en.pdf)
11. Articles 13 Third Electricity Directive and Article 14 Third Gas Directive.
12. Article 14(1) Third Electricity Directive and 15 (1) Third Gas Directive.
13. Article 13(2)(a) Third Electricity Directive and Article 14(2)(a) Third Gas Directive
14. Article 14(1) Third Electricity Directive and 15(1) Third Gas Directive
15. Article 13(5)(b) Third Electricity Directive and Article 14(5)(b) Third Gas Directive
16. Article 13(1) Third Electricity Directive and 14(1) Third Gas Directive (approval by Commissioner). Articles 3(1) of the New Electricity and Gas Regulations provide for opinions given by ACER.
17. Article 13(2)(c) Third Electricity Directive and 14(2)(c) Third Gas Directive
18. Article 19(3) Third Electricity Directive and Article 19(3) Third Gas Directive
19. Article 19(8) Third Electricity Directive and Article 19(8) Third Gas Directive
20. Article 22 Third Electricity Directive and 22 Third Gas Directive
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22. Article 37(5) Third Electricity Directive and Article 41(5) Third Gas Directive
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# Energy law in the Netherlands

## Recent developments in the Dutch energy market

Marc van Beuge, advocaat, Houthoff Buruma

### Weathering the perfect storm

In recent years, the Netherlands' energy sector was hit by a 'perfect storm' consisting of a number of interacting factors: a revision of demand expectations, a drastic shift from gas to coal-fired power plants and growth of both conventional and renewable generation capacities. Generally speaking, the global financial crisis led to the worst economic recession in the European Union in many decades, resulting in a sharp decline in electricity demand, especially in industry, which was compounded by improvements in energy efficiency. At the same time, a strong increase in United States domestic gas production from unconventional sources, the 'shale gas revolution', created additional US demand for relatively cheap gas, at the expense of coal, which was exported towards other markets, including the EU. The resulting oversupply of cheap coal on the Western European market combined with relatively high gas prices changed the economics of gas versus coal in the power sector. The situation was aggravated by the fall in the price of CO<sub>2</sub> emission allowances under the EU emission trading system. In this context, newly built coal and gas-fired power plants led to overcapacity in power generation. Furthermore, intermittent renewable energy sources (eg, wind and solar power), which surged due to elaborate renewable energy subsidy schemes, continue to displace coal and particularly gas-fired power generation facilities. The overcapacity and the weak and falling power prices have put significant financial pressure on utilities and have led to the mothballing or shut-down of a significant number of unprofitable conventional power plants in the Netherlands.

Against this background it is not surprising that the Netherlands is, at present, a net electricity importer, with electricity prices in the Netherlands below the EU average while gas prices are above the EU average. In line with EU objectives and prompted by the Energy Agreement for Sustainable Growth, the Netherlands is gradually developing a more sustainable energy system. Renewable energy supply is slowly but steadily increasing, decentralised electricity generation is on the rise and, thus far, grid operators appear to have been effective in ensuring that the increase in flexible power production (solar and wind power) has not led to a lower security of supply. Energy policy and its implementation are an increasingly regional or even local matter, although achieving sufficient public support in such a densely populated country as the Netherlands continually presents a challenge. The low electricity price, as well as the low oil price, are generally favourable to large and small end-users, although these low prices do not promote energy-saving measures. With domestic gas production on the decline, the Netherlands remains committed to becoming an important European gas hub in order to ensure security of supply. It is continuously exploring

ways to diversify its gas sourcing and reduce domestic gas consumption, for example by increasing the energy efficiency of buildings and by using heat and terrestrial heat as alternative sources of heating.

### Unbundling of DSOs: recent developments

As set out in some detail in the overview of the Netherlands' legal and regulatory framework, the Netherlands has adopted the Unbundling Act which prescribes the full ownership unbundling of all vertically integrated energy companies (see: Overview, sections A.1 and B.1). The core provision of the Unbundling Act is the so-called 'group prohibition' which prohibits the TSO and the DSOs from being a part of the same group of companies (as defined in the Dutch Civil Code), as companies engaged in production, trading and/or supply activities in the Netherlands. Furthermore, network companies are prohibited from holding any shares, directly or indirectly, in an electricity production, trading and/or supply company or related companies in the Netherlands, and vice versa.

Despite the Supreme Court's judgment of 26 June 2015, the DSOs' opposition against the imposition and enforcement of the group prohibition has not yet ceased. In recent legal proceedings, Eneco and Delta, the two major energy companies in the Netherlands that were not yet unbundled, argued that the group prohibition breaches article 1 paragraph 1 of the First Protocol to the European Convention for the Protection of Human Rights and Fundamental Freedoms ("ECHR"), which protects their ownership rights. In these appeal proceedings against the judgment rendered by the Court of the Hague on 11 March 2009 in favour of the Dutch State, the DSOs raised doubts as to the effectiveness of the group prohibition, claimed that they will be put at a disadvantage in comparison with other foreign-owned energy companies, and that they will lose the advantages of an integrated energy company such as a higher credit rating as a result of which they would have to attract financing for their commercial activities against less advantageous conditions.

The Amsterdam Court of Appeal, in its judgments of 1 November 2016 (ECLI:NL:GHAMS:2016:4285 and 4286), ruled that the above is insufficient to conclude that the group prohibition and the unbundling that is required poses a disproportionate burden on the DSOs such that the fair balance between the general interest and their individual ownership interests has been disrupted to a relevant extent. However, the Court of Appeal has pointed out that Delta, in addition to losing the above-mentioned advantages, may be forced to sell its profitable grid related activities and be left with only the loss-making commercial activities (eg, the Borssele nuclear power plant). According to the Court of Appeal this raises the

question of whether such would impose upon Delta a disproportionate burden which could only be fairly balanced if Delta is to a certain extent compensated for its financial loss. The Court of Appeal has requested Delta and the Dutch State to inform it of their substantive opinions on this issue before taking a decision. The decision is expected in 2017.

Following the aforementioned judgments, both Eneco and Delta have been unbundled. Eneco was unbundled on 31 January 2017, into energy company Eneco and grid company Stedin. The scenario envisaged by the Court of Appeal in relation to Delta, meanwhile, has become a reality. Delta has sold its grid related activities, including DSO Enduris, to Stedin Holding. Prior to that, Delta had already sold its retail activities, including energy supply, to Swedish investment fund EQT Infrastructure.

## Legislative proposals

### Stroom

In May 2015 the Minister for Economic Affairs ("MEA") submitted the Stroom legislative proposal (*wetsvoorstel Stroom*) to parliament. It was aimed at merging, in phases, the Electricity Act and the Gas Act into a single Electricity and Gas Act, to be completed by the Electricity and Gas Decree and the Electricity and Gas Regulation, both of which were also published. Stroom is an acronym for Streamlining, Optimising and Modernising. The MEA's intention was to create a modern, flexible framework act structured in accordance with the energy supply chain which would eliminate differences between European and national legislation as well as unintended differences between the Electricity Act and the Gas Act. The proposal was rejected by the Upper House of Parliament on 22 December 2015 by a one vote margin because it was considered to 'confirm' the controversial group prohibition in the Unbundling Act (see: above). It is generally expected that the MEA will reintroduce the proposal, whether or not in tranches, especially now that Eneco and Delta have been unbundled.

### Energy transition continuation act

In December 2016, the MEA submitted a legislative proposal for the Energy Transition Continuation Act (*Wetsvoorstel voortgang energietransitie*) to parliament. It introduces certain elements from the Stroom legislative proposal, previously rejected by parliament, which the MEA considers necessary to continue the energy transition. The most controversial of these are provisions demarcating the powers of the network group, ie, the group of companies – the economic entity as defined in the Dutch Civil Code, to which a grid operator belongs, vis-à-vis those of other commercial energy companies. Another important provision in the proposal would allow for cross equity participation in the Dutch TSOs by a foreign TSO provided that at least 75% of the shares in, and the predominant control over, the Dutch TSO remain directly or indirectly with a Dutch public body. In April 2017 the legislative proposal was declared 'controversial', which means that it will not be debated by parliament pending the formation of a new Dutch government following recent general elections.

## Other significant developments: the Heat Act

The Heat Act (*Warmtewet*), the Heat Decree (*Warmtebesluit*) and the Heat Regulation (*Warmteregeling*) entered into force on 1 January 2014. In summary, the Act regulates the supply of heat to relatively small users. The supply of heat to larger users is not regulated.

The Heat Act's core provision determines that a supplier of heat must ensure a reliable supply of heat to users, with good quality service, against reasonable conditions and at no more than a maximum price. Users are parties that take delivery of heat from a heat grid and that have a connection to the grid with a throughput capacity of no more than 100kW. Users with a larger capacity connection do not fall within the scope of the Act.

The supplier of heat is the party that has entered into a supply contract with a user. A supplier of heat must enter into a written supply agreement with each of his users which is in conformity with its statutory obligations and certain minimum requirements. A supplier is obliged to prevent or resolve as soon as possible any disconnection or disruptions in the heat supply. Every supplier must provide the Authority for Consumers and Markets ("ACM") with his contact details, a description of the heat grids used, the number of users and the volume of heat supplied, as soon as possible.

The supply of heat to a user generally requires a supply licence from the MEA, unless the supplier (i) does not supply to more than 10 users, (ii) does not supply more than 10,000GJ of heat on an annual basis, or (iii) is the lessor or the owner of the building to which heat is being supplied. A supply licence is, in principle, valid for the Netherlands as a whole. A supply licence holder has a number of obligations in addition to the obligations that follow from the above-mentioned core provision. Even if a supplier does not require a supply licence, the above-mentioned core provision still applies in full.

The supplier of heat may not charge a user more than the maximum price for the supply of heat. The maximum price is set annually by the ACM and consists of a fixed amount (in 2016: €276.13) and an amount per GJ (in 2016: €22,66). In addition a supplier may charge the reasonable costs for renting out a heat exchanger, as well as a maximum metering fee (in 2016: €24.97). For the establishment of an unforeseen (ie, unplanned) connection to an existing heat grid, the supplier may charge a non-recurring connection fee (in 2016: €962.95). A supplier is prohibited from charging other costs.

A proposed amendment to the Heat Act was published for consultation in July 2016. The bill contains amendments aimed at more effectively protecting users that are supplied with heat by a supplier of heat that has a de facto monopoly. One such amendment limits the scope of the Heat Act by excluding (i) the supply of heat to a user by a supplier that also acts as the lessor of the user to whom heat is being supplied in the event that the supply of heat forms a part of the lease agreement with the user, and (ii) the supply of heat to a user by a supplier that also constitutes the owners' association or cooperative association of which the user to whom heat is being supplied is a member. The MEA has not yet sent the relevant bill to parliament.

# Overview of the legal and regulatory framework in the Netherlands

## A. Electricity

### A.1 Industry structure

#### Generation

In the Netherlands 100TWh of electricity is generated annually, 80% from fossil fuels, 12% from renewable energy sources and 3% from nuclear fuel. About 60% is generated by production units connected to the national high voltage transmission grid, and about 40% by units connected to the regional transport grids. The largest electricity producers in the Netherlands are Essent, Engie, Nuon, Uniper and EPZ, demonstrating that many (large) production facilities in the Netherlands are foreign-owned.

#### Transmission/distribution

The transmission and distribution grids in the Netherlands add up to 340,000km of power cables. The national transmission grid ( $\geq 110\text{kV}$ ) is 10,000km long and mostly above ground. The distribution grids are 300,000km long, mostly below the surface. The national transmission grid is connected to transmission grids in Germany, Belgium, Norway and the United Kingdom through interconnectors. The national transmission grid and the interconnectors are operated by TenneT TSO B.V., the Netherlands' TSO. The distribution grids are operated by eight (regional) DSOs. All transmission and distribution grids, the TSO and the DSOs are required by law to be publicly owned. They are therefore owned directly or indirectly by the Dutch State, provinces, municipalities or other public entities. The largest DSOs are Liander, Enexis, Stedin and Enduris. A number of small-scale grids (including closed distribution systems) are owned and operated by privately owned third parties.

#### Supply

In the Netherlands 110TWh of electricity is consumed annually, 65% of which is consumed by 335,000 large end-users and 35% by 7.7 million small end users. Roughly speaking, 80% of the electricity is consumed by business end-users and 20% by households. The largest electricity supply companies in the Netherlands are Essent, Nuon and Eneco. As of 1 July 2004, consumers in the Netherlands have been free to choose their own suppliers. Following this full liberalisation of the electricity market, the former incumbent electricity suppliers lost market shares to new entrants. At present there are over 50 electricity suppliers in the Netherlands.

#### Unbundling

The Netherlands has implemented the unbundling requirements set out in the Third Electricity Directive aimed at the effective separation of energy production and supply

interests from the transmission systems and the TSOs. In this context, the Netherlands have opted for full ownership unbundling ("FOU"). This ensures that a single entity shall not directly or indirectly exercise control over a production or supply company on the one hand, and over a transmission system or TSO on the other, and vice versa. In practice, this means that the Dutch State, through the Ministry of Finance, is the sole shareholder in TenneT Holding B.V. which, in turn, is the sole shareholder in TenneT TSO B.V., the Netherlands' TSO. The transmission system is owned by TenneT subsidiaries. The Dutch State is not involved in the production or supply of electricity.

In addition to implementing EU unbundling requirements, the Netherlands adopted the "Amendment to the Electricity Act and the Gas Act in connection with further rules concerning Independent Network Management". This is referred to as the Unbundling Act, and requires the full ownership unbundling of vertically integrated energy companies.

The core provision of the Unbundling Act is the so-called 'group prohibition' which prohibits the TSO and the DSOs from being a part of the same group of companies (as defined in the Dutch Civil Code) as companies engaged in production, trading and/or supply activities in the Netherlands. Furthermore, network companies are prohibited from holding any shares, directly or indirectly, in an electricity production, trading and/or supply company or related companies in the Netherlands, and vice versa.

The Unbundling Act's group prohibition entered into force on 1 July 2008 and all energy companies in the Netherlands were required to comply with the provision by 1 January 2011. In the face of this, three of the largest energy companies – Essent, Eneco and Delta – instituted court proceedings against the Dutch State at the beginning of 2008, arguing that the unbundling obligation is in breach of European law as it restricts the free movement of capital and the freedom of establishment without there being any compelling reasons in the public interest justifying such restriction. These proceedings led to a preliminary ruling by the European Court of Justice (Joined cases C-105/12, 22 October 2013) and culminated in the Netherlands' Supreme Court judgement of 26 June 2015. The judgement concludes that the group prohibition, assuming that it limits the above-mentioned freedoms, is justified by compelling reasons in the public interest, suitable for achieving the legislature's envisaged goals (preventing cross-subsidies, consumer protection, safeguarding security of supply and ensuring that system operators do not engage in activities that endanger their public function), and which do not go further than necessary for that purpose.

The net result of the above is that two of the largest energy companies in the Netherlands, Essent and Nuon, unbundled

voluntarily in the second half of 2009 resulting in the sale of their production, trading and supply activities to RWE and Vattenfall respectively. Their network activities consisting of DSOs Enexis and Liander and their distribution systems, remain publicly owned. The other two major energy companies in the Netherlands, Eneco and Delta, which were required to unbundle by 31 January 2017 and 30 June 2017 respectively, subject to a penalty for non-compliance imposed upon them by the regulator, have recently also been unbundled. The unbundling details are set out in the overview of recent developments.

### Energy policy and legislation

The Netherlands' energy policy and energy legislation are primarily determined by the Minister for Economic Affairs (the "MEA"). The most important policy document is the Energy Report which the MEA is required to publish at least once every four years. The most recent report, "Transition to Sustainability", was published in January 2016. The production, transport and supply of electricity are primarily regulated via the Electricity Act and lower legislation including governmental decrees, ministerial regulations, various Technical Codes and a Tariff Code. The Third Electricity Directive and its predecessors were transposed into national legislation via the Electricity Act.

### National energy regulatory authority

The national energy regulatory authority for the Netherlands is the Authority for Consumers and Markets (*Autoriteit Consument en Markt*, "ACM"), established on 1 April 2013 through a consolidation of the Dutch Competition Authority (the previous regulator), the Dutch Consumer Authority and the Independent Post and Telecommunications Authority of the Netherlands. The ACM is a so-called autonomous administrative authority which is part of the central government but which does not form part of any ministry. The ACM is responsible for monitoring compliance with the Electricity Act, and has the authority to impose certain sanctions in this regard. The ACM also has certain statutory tasks among which are setting the connection and transportation tariffs and conditions on the basis of proposals made by the systems operators.

#### A.2 Third party access regime

The Electricity Act incorporates a system of regulated third party access in the Netherlands. Upon request, the TSO or DSO is obliged to provide a connection to, and make an offer to transport electricity via, its grid against objective and non-discriminatory tariffs and conditions set by the regulator. The TSO or DSO may not discriminate between applicants requesting a connection or transport capacity. A connection must be built within a reasonable period of time. A request for transport capacity may, in principle, only be denied if the TSO or DSO substantiates that it does not have sufficient transport capacity available.

#### A.3 Market design

In the Netherlands, as in other EU member states, discussions are taking place with respect to the adequacy of the current design of the electricity market. Most discussions centre around safeguarding security of supply against reasonable costs in such a way that any distortion of competition is as limited as possible.

An important discussion relates to the introduction of capacity mechanisms aimed at encouraging sufficient investment in new power plants and/or ensuring that power plants continue to operate. Adequate production capacity is required to ensure that electricity supply continually meets demand and, ultimately, to avoid black-outs. This is particularly important in view of the increase in intermittent renewable generation which requires an effective back-up capacity mechanism to ensure that sufficient electricity is also available when the sun is not shining and/or the wind is not blowing. It is apparent from the Energy Report of January 2016 that the Netherlands has no intention of introducing a capacity mechanism. It is a proponent of an 'energy-only' market, ie, a market in which producers are paid only for the electricity they have produced and not for keeping a certain production capacity available.

The Lower House of Parliament has requested the MEA to close all coal-fired power plants in the Netherlands, without setting a specific date. In the Energy Agreement for Sustainable Growth (see section D.4 below) it was agreed that the most polluting electricity generation facilities (ie, the five coal-fired power plants in the Netherlands dating from the 1980s) will be closed before 1 July 2017. Once these older plants have been shut down, five coal-fired power plants will remain, two from the 1990s (RWE/Essent's Amercentrale 9 and Nuon's Hemwegcentrale 8) and three recently commissioned plants in the Eemshaven (RWE/Essent) and Maasvlakte regions (Uniper and Engie). The Court of The Hague in its Urgenda judgment of 24 June 2015 ruled that the State must ensure that by 2020, greenhouse gas emissions are reduced by 25% in comparison with 1990. Both Urgenda and the State have lodged an appeal against the judgment. Although the judgment has put additional pressure on the MEA to increase measures aimed at reducing greenhouse gas emissions, such as closing additional coal-fired power plants, the MEA had informed parliament that a decision - if any - to shut down additional plants will not be taken until a new government has been formed following recent general elections.

#### A.4 Tariff regulation

Tariff regulation in the Netherlands for the DSOs is based on a revenue setting mechanism (the revenue is regulated per transported unit of energy) and yardstick competition, meaning that each grid operator competes with a benchmark, the average grid operator (the sector average cost per output). This system incentivises DSOs to improve their productivity because they achieve higher profits if their productivity is above average.

Tariff regulation is based on the Electricity Act, the Regulation tariff structures and conditions for electricity and the Tariff Code Electricity. The Electricity Act determines that there are three regulated tariffs: a connection tariff, a transport tariff and a metering tariff. The Act further determines the services to which these tariffs relate and the parties that are required to pay them. The Regulation, set by the MEA, states which elements the tariff structures must in any event contain. The tariff structures themselves, in which the elements and the way in which they are calculated are set out, are contained in the Tariff Code which is set by the ACM based on a proposal by the joint grid operators.

For regulation purposes there are two types of grid operators: the TSO and the regional DSOs. Each regulation period lasts between 3 and 5 years. The current regulation period will last for 5 years, from 2017 to 2021. The ACM takes a so-called Method Decision for each regulation period, which determines how the yardstick will be set for the relevant type of grid operator. The ACM subsequently takes individual decisions in relation to each grid operator for the duration of the regulation period, based on the Method Decision, setting the x-factor (an efficiency cut relating to the grid operators' revenues), the q-factor (a quality term, only for DSOs) and the so-called calculation volumes (fixed sales, set in advance). Finally, the ACM takes annual tariff decisions for each individual grid operator.

### Tariffs

The connection tariff is the tariff for which connected parties (including producers and end-users) will be connected to a grid. It consists of a non-recurring contribution to the initial investment required to construct the connection, as well as a periodical compensation covering the sustainment of the connection. The tariff is largely based on the capacity of the connection, and is due by each connected party that has been connected, by a grid operator, to a grid that is operated by a grid operator.

The transport tariff is the tariff for which a grid operator is required to provide transport and systems services (balancing) for the benefit of the connected party. The tariff relates to the delivery of and feeding-in of electricity by a connected party, regardless of its geographical location (this is the postage stamp tariff). The tariff is calculated per connection and is due by each connected party that receives electricity on a connection to a grid that is operated by a grid operator. For small end-users the tariff is directly related to the capacity of their connections. For large end-users the tariff has two components: the contracted transport capacity and a variable component that depends on the volume of electricity transported.

The metering tariff due by small end-users is the tariff for which the grid operator manages the metering devices and grants suppliers access to metering data. The metering tariff for large end-users is liberalised.

## A.5 Market entry

### Entering the electricity generation market

In the Netherlands production as such is not heavily regulated but the most important renewables subsidy, the Stimulation of renewable energy production (SDE+), a production subsidy, is subject to heavy regulation. A production licence is not required to construct or operate generation facilities but, depending on the type, size and location of the facility there are likely to be other requirements such as spatial planning and environmental permits. Furthermore, potential new entrants should note that a change of control over a generation facility with a nominal electrical capacity of more than 250MW (or a change of control over the operator of such a facility) must be notified in writing to the MEA by one of the parties involved at least four months before the proposed change of control takes effect.

### Entering the electricity distribution market

The distribution of electricity is heavily regulated under the Electricity Act and its secondary legislation, which sets the tasks of the grid operator and contains requirements aimed at guaranteeing the independence of the grid operator as well as requirements relating to the tariffs and conditions subject to which the grid operator must operate its grids. In practice the investments required to construct a distribution grid and the administrative, financial and technical know-how required to comply with the aforementioned legislation present a practical barrier to potential new entrants. The general rule is that a grid operator must be appointed for every grid in the Netherlands. In relation to distribution systems this duty lies with the legal owner of such grids. Only public limited companies or private companies with limited liability can be appointed as grid operators, and the MEA must consent to such appointment. An appointment is valid for a period of ten years after the date of the MEA's consent.

### Entering the electricity supply market

The supply of electricity to large end-users is largely a free market activity, but the supply of electricity to small end-users (ie, end-users with a connection to a grid with a total maximum throughput capacity of 3x80A) is, in principle, subject to a licence because such end-users are considered to require a certain level of consumer protection. Supply licences are issued by the ACM on behalf of the MEA, provided that the applicant can demonstrate that he possesses the necessary organisational, financial and technical qualities to act as supplier to small end-users. There are a limited number of exceptions to the prohibition of supplying small end-users without a supply licence, including the circumstance that the electricity is generated by an installation which is operated for the account and risk of the small end-user(s) consuming the electricity supplied.

## A.6 Public service obligations and smart metering

Public service obligations (ie, service obligations imposed by government on a service provider for a public interest purpose) are set pursuant to the Electricity Act and include: (i) the third party access duties that rest upon grid operators (see section A.2 above); (ii) the duty on suppliers to provide small end-users with a reliable supply of electricity subject to reasonable tariffs and conditions; (iii) the duty on grid operators to pursue a policy aimed at preventing small end-users from being disconnected from the grid, especially between 1 October and 1 April of any year; and (iv) the duty on grid operators and the supplier to ensure the security of supply of small end-users.

The regulations relating to the installation and use of smart metering systems for small end users are incorporated in the Electricity Act and the Governmental decree on smart metering systems (*Besluit op afstand uitleesbare meetinrichtingen*). The Netherlands have taken a two-stage approach with respect to the roll-out of smart metering systems: a pilot, small scale roll-out stage which ended in 2014. This was followed by the current large scale roll-out stage which is scheduled to end in 2020, at which point approximately 80% of all small end-users should have a smart meter at their disposal. The grid operators have been tasked with the roll-out. In general, they are required to install smart meters in cases of regular meter replacement, new housing developments and major renovation projects, or at the request of small end users. Smart meters are not mandatory, since small end users can refuse to have a smart meter installed.

## A.7 Cross-border interconnectors

The Netherlands has cross-border connections with Belgium, Germany, the United Kingdom and Norway. The alternate current interconnectors form an integral part of the national transmission system, whereas the direct current interconnectors are operated separately. The Netherlands has a total available interconnector capacity for the day-ahead market of 5,650MW, consisting of three alternate current interconnectors with Germany (Maasbracht, Meeden-Diele and Hengelo-Gronau; 2,449MW), two alternate current interconnectors with Belgium (Maasbracht and Zandvliet; 1,501MW), one direct current subsea interconnector with Norway (NorNed; 700MW), and one direct current subsea interconnector with the United Kingdom (BritNed; 1,000MW). An expansion of interconnector capacity by 3,400MW between the present and 2021 is planned, consisting of a new interconnector with Germany (Doetinchem-Wesel; 1,500MW), an expansion of the Meeden-Diele interconnector with Germany (500MW), a new interconnector with Belgium (Krekrak-Zandvliet; 700MW) and a new subsea interconnector with Denmark (COBRA cable; 700MW).

## B. Oil & Gas

### B.1 Industry structure

#### Production

The Netherlands is one of the largest gas producers and exporters in Europe. Its Groningen natural gas field is one of the 10 largest onshore gas fields in the world. In 2016, the Netherlands' total natural gas reserves were estimated at 891bcm (665bcm Groningen field, fields, 117bcm offshore fields, 109bcm small onshore), accounting for 30% of all European natural gas reserves. The Netherlands' gross annual natural gas production amounts to about 50bcm (28bcm Groningen field, 14bcm offshore fields, 8bcm from onshore fields).

In 1963, a production licence for the Groningen field was granted to the Nederlandse Aardolie Maatschappij (NAM), a 50/50 joint venture between Shell and ExxonMobil. The NAM produces the Groningen field for the risk and account of the Maatschap Groningen (60% interest NAM; 40% interest EBN; control 50/50% NAM/EBN). The gas produced is sold by GasTerra for the benefit of the Maatschap Groningen. GasTerra's shares are owned by the Dutch state (10% directly and 40% through EBN) and industry (25% Shell and 25% ExxonMobil). The set-up is known as the Netherlands' *Gasgebouw* which translates literally as 'gas building'. The MEA decided to decrease the production limit on the Groningen field to an annual 24bcm for 2016-2021, in order to limit the detrimental effects of gas production such as earthquakes. Following advice from the State Supervision of Mines, the MEA has announced the decision to prepare for a further reduction of gas production by 10% as of 1 October 2017 to limit the number of earthquakes in the Groningen area.

To extend the life of the low-calorific Groningen field as strategic reserve and 'swing producer', the Dutch small fields policy (*kleineveldenbeleid*) was introduced in 1974. Under this policy the production of gas from the small gas fields (small by comparison to the Groningen field) takes preference over the production of gas from the Groningen field. The small fields

policy was implemented via the Gas Act, and provides that GasTerra must guarantee the off-take of all gas produced from small fields on market terms, provided that a licence has been issued. Small field producers are, however, not obliged to offer all gas produced to GasTerra B.V. and can choose whether they wish to sell gas to GasTerra or to a third party. GTS, the TSO, must, in principle, provide transport capacity for small fields gas. The largest gas producers in the Netherlands are the Nederlandse Aardolie Maatschappij (NAM), Gaz de France, Total, Wintershall and Petrogas.

In relation to shale gas, the MEA decided in 2015 that he will not permit the commercial exploration or production of shale gas before 2020, although research drilling may be allowed as of 2018.

#### Transmission/distribution

The transmission and distribution grids in the Netherlands add up to 136,000km of gas pipelines (national high pressure transmission grid 12,000km, distribution grids 124,000km). The national transmission grid is connected to the transmission grids in Germany, Belgium and the United Kingdom through interconnectors. The national transmission grid and the interconnectors are operated by Gasunie Transport Services B.V. ("GTS"), the Netherlands' TSO. The distribution grids are operated by 9 regional DSOs. All transmission and distribution grids, the TSO and the DSOs are required by law to be publicly owned. They are therefore owned, directly or indirectly, by the Dutch State, provinces, municipalities or other public entities. The exception to this rule is GTS. The largest DSOs are Liander, Enexis, Stedin and Enduris. A number of small-scale grids (including closed distribution systems) are owned and operated by privately owned third parties.

The Dutch government aims to be the 'gas hub' (*gasrotonde*) of North Western Europe in order to ensure a diversity of gas supply and the retention of gas related know-how while domestic production continues to decline. There is therefore an increased focus on gas transport (from and to other EU countries), storage and trade as well as gas exports. Large investments are being made to improve existing infrastructure by increasing transport capacity and creating new gas storage facilities.

#### Supply

In the Netherlands 38bcm of natural gas is used annually, whilst the annual export and import of natural gas equals 47bcm and 34bcm respectively. The largest electricity supply companies in the Netherlands are Essent, Nuon and Eneco. As of 1 July 2004, each consumer in the Netherlands has been free to choose their own supplier. Following this full liberalisation of the electricity market, the incumbents lost market share to new entrants. At present there are over 50 gas suppliers in the Netherlands.

#### Unbundling

The Netherlands has implemented the unbundling requirements set out in the Third Gas Directive aimed at the effective separation of energy production and supply interests from the transmission systems and the TSO. In this context, the Netherlands have opted for full ownership unbundling ("FOU"), ensuring - in summary - that the same person cannot directly or indirectly exercise control over a production or supply

company on the one hand and over a transmission system or TSO on the other, and vice versa. In practice, this entails that the Dutch State, through the Ministry of Finance, is the sole shareholder in N.V. Nederlandse Gasunie which, in turn, is the sole shareholder in Gasunie Transport Services B.V., the Netherlands' TSO. The transmission system is owned by N.V. Nederlandse Gasunie. The Dutch State is also involved in the production and supply of gas through GasTerra (in which it has a 10% interest) and EBN (which it owns 100%). However, this is permitted under the Third Gas Directive's ownership unbundling rules because these interests are held by a separate government body: the Ministry of Economic Affairs.

### Energy policy and legislation

The Netherlands' energy policy and energy legislation are primarily determined by the MEA. The production and offshore transport of gas is regulated under or pursuant to the Mining Act, whereas the transport and supply of gas are regulated via the Gas Act and subordinate legislation including governmental decrees, ministerial regulations, various Technical Codes and a Tariff Code. The Third Gas Directive and its predecessors were transposed into national legislation via the Gas Act.

#### B.2 Third party access regime to the gas transportation networks

The Gas Act incorporates a system of regulated third party access in the Netherlands. Upon request, a grid operator is, in principle, obliged to provide a connection to small end-users and, to large end-users, a connection point on the nearest point on the grid that has sufficient capacity available at an appropriate pressure for the envisaged connection. The grid operator is also required, upon request, to make an offer to transport gas via its grid against objective and non-discriminatory tariffs and conditions set by the regulator. The TSO or DSO may not discriminate between applicants requesting a connection or transport capacity. A request for transport capacity may, in principle, only be denied if the TSO or DSO substantiates that it does not have sufficient transport capacity available or if the grid operator cannot reasonably be expected to make such capacity available. In general, the MEA has the possibility to grant an exemption from third party access to large, new cross border transmission grids, LNG installations and gas storage facilities, provided – in summary – that the exemption is required to ensure that the investment in such infrastructure is made and that competition in relation to, and the efficient operation of, the relevant market or the infrastructure is not restricted.

#### B.3 LNG terminals and storage facilities

##### LNG

The Netherlands has one large scale LNG terminal, the GATE (Gas Access to Europe), which is located in the Rotterdam port area. The terminal became operational in 2011 and has an annual regasification capacity of 12bcm which can be expanded to 16bcm. The initiators and partners in GATE terminal are N.V. Nederlandse Gasunie and Koninklijke Vopak N.V.. Offtake contracts have been signed with Dong Energy, EconGas GmbH, Eneco, E.ON Ruhrgas and Shell.

Gasunie Peakshaver B.V., an N.V. Nederlandse Gasunie subsidiary, also has a small scale LNG peak shaver in the Rotterdam port area,

with a capacity of 78 million cubic meters of natural gas and a maximum production capacity of 1.3 million cubic meters, which is mostly used to supply gas to small end-users.

It is relevant to note that any change of control over an LNG facility (or a change of control over the operator of such a facility) must be notified in writing to the MEA by one of the parties involved at least four months before the proposed change of control takes effect.

#### Third party access to LNG terminals

Under the Gas Act, a regulated third party access regime applies to LNG installations. Rules in respect of calculation methods for tariffs and conditions for access to LNG installations are set out in the Regulation access to LNG installations. The grounds for refusal of third party access to LNG regasification capacity are the same as those in relation to transport capacity (see section B.2 above).

#### Gas storage

The Netherlands has a total gas storage capacity of over 12bcm. There are five major gas storage facilities in the Netherlands. The capacity of the Grijsperk (NAM, 1.5bcm), Langelo/Norg (NAM, 3bcm) and Alkmaar (TAQA, 0.5bcm) facilities has been contracted by N.V. Nederlandse Gasunie for the long term. The gas storage facilities at Zuidwending (Gasunie Zuidwending B.V., 0.2bcm) and Bergermeer (TAQA, 4.1bcm, the largest gas storage facility in Western Europe accessible to third parties), offer independent storage services to third parties. In addition, many of the large energy companies own gas storage facilities just across the German border which are also connected to the Dutch gas grid.

#### Third party access to gas storage facilities

Under the Gas Act, a negotiated third party access regime applies to gas storage facilities. A gas storage operator is obliged, upon a third party's request, to negotiate access to its gas storage facility if access to the facility is necessary for the requesting party in a technical or economic sense to gain an efficient access to the system for the supply of grid users. Although the Gas Act provides that lower legislation can be adopted to set rules in this regard, no such legislation is in place. The Gas Act does provide that a gas storage operator must annually publish objective, transparent and non-discriminatory indicative tariffs and conditions for the provision of gas storage services in the following calendar year which form the basis for the envisaged negotiations. The grounds for refusal of third party access to gas storage capacity are the same as those in relation to transport capacity (see section B.2 above).

#### B.4 Tariff regulation

Tariff regulation in the Netherlands for the DSOs is based on a revenue setting mechanism (regulation of the revenue per transported unit of energy) and yardstick competition, meaning that each grid operator competes with a benchmark, the average grid operator (the sector average cost per output). This system incentivises DSOs to improve their productivity because they achieve higher profits if their productivity is above the average.

Tariff regulation is based on the Gas Act, the Regulation tariff structures and conditions for gas and the Tariff Code Gas. The

Gas Act entails that there are three regulated tariffs: a connection tariff, a transport tariff and a metering tariff. The Act further determines the services to which these tariffs relate and the parties that are required to pay them. The Regulation, set by the MEA, states which elements the tariff structures must in any event contain. The tariff structures themselves, in which the elements and the way in which they are calculated are set out, are contained in the Tariff Code which is set by the ACM based on a proposal by the joint grid operators.

For regulation purposes there are two types of grid operators: the TSO and the regional DSOs. Each regulation period lasts between 3 and 5 years. The current regulation period will last for 5 years, from 2017 to 2021. The ACM takes a so-called Method Decision for each regulation period, which determines how the yardstick will be set for the relevant type of grid operator. The ACM subsequently takes individual decisions in relation to each grid operator for the duration of the regulation period, based on the Method Decision, setting the x-factor (an efficiency cut relating to the grid operators revenues), the q-factor (a quality term, only for DSOs) and the so-called calculation volumes (fixed sales, set in advance). Finally, the ACM takes annual tariff decisions for each individual grid operator.

### Tariffs

For all small end-user connections uniform connection tariffs apply. For large end-users a uniform fee applies only to the connection point on the grid, whereas other components are calculated on a case-by-case basis. The transport tariff is the tariff for which a grid operator is required to provide transport for the benefit of the connected party. End-users are required to pay a standing charge for the transport service irrespective of the volume of gas used, and a capacity tariff, which differs depending on the capacity category in which the end-user is classified. The metering tariff, due by small end-users, is the tariff for which the grid operator manages the metering devices and grants suppliers access to metering data. The metering tariff for large end-users is liberalised.

## B.5 Market entry

### Entering the gas production market

The exploration and production of natural gas is regulated under or pursuant to the Mining Act, which incorporates a licence based system (see: F, below).

### Entering the gas distribution market

The distribution of gas is heavily regulated under the Gas Act and subordinate legislation, which set the tasks of the grid operator and contain requirements aimed at guaranteeing the independence of the grid operator as well as requirements relating to the tariffs and conditions subject to which the grid operator must operate its grids. In practice the investments required to construct a distribution grid and the administrative, financial and technical know-how required to comply with the aforementioned legislation present a practical barrier to potential new entrants. The general rule is that a grid operator must be appointed for every grid in the Netherlands. In relation to distribution systems this duty rests upon the legal owner of such grids. Only public limited companies or private companies with limited liability can be appointed as grid operators, and the MEA must consent to such appointment. An appointment is valid for a period of ten years after the date of such consent.

### Entering the gas supply market

The supply of gas to large end-users is largely a free market activity, but the supply of gas to small end-users (ie, end-users with a connection to a grid with a total maximum capacity of 40m<sup>3</sup>(n) per hour) is, in principle, subject to a licence because such end-users are considered to require a certain level of consumer protection. Supply licences are issued by the ACM on behalf of the MEA, provided that the applicant can demonstrate that he possesses the necessary organisational, financial and technical qualities to act as supplier to small end-users. There are a limited number of exceptions to the prohibition of supplying small end-users without a supply licence.

## B.6 Cross-border interconnectors

The GTS transmission system is connected to transmission systems in Germany, Belgium and the United Kingdom by more than 15 border points. The connection with the UK, the 235km Balgzand Bacton Line ("BBL"), a gas interconnector that runs under the North Sea between Balgzand (Netherlands) and Bacton (UK), can, at full capacity, supply up to 15% of the UK's demand for gas.

The quality of gas differs between gas fields and EU Member States, inhibiting the development of a fully integrated internal gas market. The European Commission has issued a mandate to the European Committee for Standardisation ("CEN") to draw up harmonised standards for gas quality in the EU. Furthermore, the EU is working to harmonise the quality of gas in Europe in cooperation with the European Association for the Streamlining of Energy Exchange (EASEE-gas).

## C. Energy trading

### C.1 Electricity trading

The Electricity Act does not regulate electricity trading in much detail. In summary, it states that there are traders (ie, organisational entities that enter into agreements for the sale and purchase of electricity) with the same general obligations as other commercial entities, and that the MEA must appoint one or more legal entities to establish an electricity exchange which is considered important to increase liquidity and transparency in electricity trading and which must operate independently from any traders and vice-versa. Clearly traders are also subject to European legislation such as REMIT, financial regulations and electricity exchange rules, but these do not fall within the scope of this chapter.

The MEA originally appointed APX B.V. (Amsterdam Power Exchange) as the electricity exchange. At the end of 2008, Endex (European Energy Derivatives Exchange) became a 100% subsidiary of APX B.V. and, therefore, part of the APX Group. In 2013, APX-ENDEX was split into the power spot exchange APX, and the power derivatives exchange Endex. APX is owned by TenneT, the Netherlands' TSO for power (70.84%) and Elia, the Belgian TSO for power (29.16%). Endex, now ICE-Endex, is owned by IntercontinentalExchange (ICE) (79.12%) and Gasunie (20.88%).

The Netherlands' day-ahead electricity market is linked to those of other North-West European countries, and therefore largely integrated in the North-West European day-ahead market, which represents a volume of 2,100TWh. The Dutch (APX), Belgian (Belpex) and French (Powernext) spot markets were

linked (tri-lateral market coupling) at the end of 2006. In 2010, the Dutch and German (EEX) markets were linked. Subsequently, in 2011, the NorNed interconnector linked the Netherlands to Norway (NordPool) and the BritNed interconnector established the link with the United Kingdom. As a result, price convergence between these countries is steadily increasing.

The Netherlands' wholesale electricity market encompasses various market places where the demand for and supply of electricity can meet: the bilateral market, the over the counter ("OTC") market, APX, Endex and the imbalance market. On the bilateral market, producers, suppliers and large end-users trade electricity on the basis of longer term non-standardised contracts, without a broker acting as intermediary. The OTC market largely consists of trade in standardised volumes with a standard duration, generally based on EFET or ISDA contracts entered into via brokers.

The APX is a non-regulated electricity exchange (ie, it is not subject to supervision by the Authority for Financial Markets). It provides for spot trade in standard volumes on the intra-day and day-ahead markets. The Endex is a regulated electricity exchange on which standard volumes of mid- and long term future products are traded. The volumes and prices on APX and Endex are anonymised and published on the exchange websites which promotes transparency. To act as trader on the APX or Endex a party must become a member of the relevant exchange. Traders on the APX must possess either a trade recognition or a full recognition from TenneT as program responsible party. In order to obtain such recognition the trader must provide substantial financial security and have the technical, administrative and organisational expertise necessary to meet its obligations.

## C.2 Gas trading

The Gas Act does not regulate gas trading in much detail. In summary, it states that there are traders (ie, organisational entities that enter into agreements for the sale and purchase of gas) with the same general obligations as other commercial entities, and that the MEA must appoint one or more legal entities to establish a gas exchange which is considered important to increase liquidity and transparency in gas trading and which must operate independently from any traders and vice-versa. Clearly traders are also subject to European legislation such as REMIT, financial regulations and gas exchange rules, but these do not fall within the scope of this chapter.

The MEA originally appointed APX Gas NL B.V. as the gas exchange. In 2010, APX Gas NL B.V. following a merger was renamed APX-ENDEX Gas B.V. In 2013, APX-ENDEX was split and APX-ENDEX Gas B.V., in summary, became ICE Endex Gas B.V. which, in 2015, was appointed by the MEA as gas exchange for the spot market and geographical 'spreads'. ICE-Endex is owned by IntercontinentalExchange (ICE) (79.12%) and Gasunie (20.88%). ICE Clear Europe provides clearing services for futures and options contracts traded on ICE Endex. In 2011, the MEA also appointed the Germany-based European Energy Exchange AG ("EEX") as gas exchange for the intra-day and day-ahead gas spot market. Finally, in 2012, the MEA appointed the France-based Powernext S.A. as gas exchange for the spot market, the futures market, geographical 'spreads' and over the

counter clearing. EEX and Powernext are both provided with clearing and settlement services by the European Commodity Clearing AG ("ECC"). In 2013, EEX and Powernext launched PEGAS, a central gas trading platform which provides its members with access to all products and allows them to trade natural gas contracts in the Belgian, Dutch, French, German, Italian and UK market areas.

In the Netherlands, gas is traded mainly on the Title Transfer Facility ("TTF"). The TTF, along with the British National Balancing Point ("NBP"), is a leading gas trading market in Europe. Consequently, TTF gas prices have become an important European index. Gasunie reported a TTF trading volume of 16,684TWh over 2015, with over 130 parties active on the TTF. The TTF, established in 2003, is a virtual trading platform based on GTS's entry-exit system. It offers market players (shippers and traders) the possibility of buying and selling gas that has been brought into the GTS system at an entry point ('entry-paid gas') to other market players multiple times before the gas leaves the system at an exit point. The seller thus delivers the gas on the TTF which serves him as a virtual exit point, whilst the buyer buys the gas on the TTF which serves him as a virtual entry point. Gas can be traded (i) via bilateral agreements where seller and buyer are aware of the other's identity, (ii) over the counter through brokers which bring a seller and a buyer together, and (iii) via a gas exchange such as ICE Endex. In order to be able to trade on the TTF, shippers or traders must obtain the relevant licence (A, B or C) thus becoming a licensed program-responsible party and subsequently register on the TTF. GTS will grant the relevant licence, provided that the shipper or trader can demonstrate that he is sufficiently creditworthy, meets the requirements for the electronic communication of nominations, and has the technical, administrative and organisational expertise necessary to meet all obligations. GTS registers title transfers of gas via the TTF by means of a 'nomination'. This is an electronic notification stating the volumes of gas transferred, the period, the quality of the gas and the buying and selling parties.

## D. Climate change and sustainability

### D.1 Climate change initiatives

The Paris Agreement on climate change of 12 December 2015 entered into force on 4 November 2016. The European Union, which submitted an intended nationally determined contribution (INDC) consisting of a 40% domestic reduction in greenhouse gas emissions by 2030 compared to 1990, signed and ratified the Agreement on 22 April 2016 and 5 October 2016 respectively. The Netherlands, which subscribes to the EU's INDC, has also signed the Agreement but it has yet to be ratified by the Dutch. The Netherlands' contribution towards meeting the EU INDC remains to be set in a new burden sharing agreement. The Netherlands' contribution towards meeting the European Community's obligations under the Kyoto-protocol of an 8% reduction in greenhouse gas emissions between 2008 and 2012 compared to 1990s, is 6%.

The above-mentioned climate change agreements as well as the EU's aim of improving security of supply by diversifying its energy supply and reducing its dependence on external energy sources, have given an important impulse to the EU's goal of increasing the production and use of energy from renewable sources. Pursuant to the Renewable Energy Directive, which

contains mandatory national overall targets aimed at achieving at least a 20% share of energy from renewable sources in the European Community's gross final energy consumption of energy in 2020, the Netherlands has the obligation to ensure that 14% of its gross energy consumption in 2020 originates from renewable sources. Its National Action Plan, drafted in 2010 in the context of the aforementioned directive, sets a goal of 14.5%. More recently, the Energy Agreement for a Sustainable Growth (see: D.4, below) set a target of 16% for 2023. Given the fact that its current gross energy consumption from renewable sources is around 6%, it is clear that the Netherlands have to make a significant effort to achieve these targets.

## D.2 Emission trading

### Implementation EU ETS

The New EU ETS Directive has been implemented in the Netherlands by means of the Environmental Management Act (*Wet Milieubeheer*), the Emissions Trading Decree (*Besluit handel in emissierechten*) and the Regulation on the monitoring of emission trading (*Regeling monitoring handel in emissierechten*). The EU ETS is currently in its third phase (2013-2020). In general, the Netherlands supports and aims to improve the EU ETS. In this context, the Energy Agreement for Sustainable Growth (see: D.4, below) states that the parties thereto aim to improve the EU ETS as of 2020 by (i) tightening up the reduction path for the ETS cap aimed at achieving the long term goal of an 80 to 95% reduction in greenhouse gases for the whole economy by 2050, (ii) securing the position of internationally competitive companies ('carbon leakage companies') by a 100% free allocation of emission allowances based on realistic benchmarks and actual production, based on the best performance in the sector and (iii) compensation for the indirect electricity costs, based on the best performance in the sector.

### Allocation of emission allowances

The EU ETS, in phase III, provides - in summary - that the amount of free allowances is to be reduced from 80% in 2013 to 30% in 2020. Member states are required to auction all allowances other than the free allowances. In the Netherlands, the amount of free allowances is set by the Minister for Infrastructure and the Environment ("MIE") in the so-called National Allocation Decision (*Nationaal Toewijzingsbesluit*) which applies to all installations under ETS as of 1 January 2013, provided that they became operational prior to 2011 (ie, it does not apply to electricity generation facilities or CCS). The amount of free allowances is calculated on the basis of certain benchmarks and a carbon leakage factor. The National Allocation Decision is subject to appeal before the Administrative Jurisdiction Division of the Council of State within 6 weeks after its assessment by the European Commission.

### Emission permit

The Environmental Management Act provides that the operation of an installation which emits EU ETS greenhouse gasses (eg. CO<sub>2</sub> and N<sub>2</sub>O) is prohibited without an emissions permit. Every permit application must include an emission monitoring plan which meets the requirements set out in EU Monitoring and Reporting Regulation 601/2012. The Dutch Emissions Authority (*Nederlandse Emissieautoriteit*, NEa), the executive organisation and supervisory agency for emissions

trading in the Netherlands, will grant an emission permit provided that an adequate monitoring plan is in place. Before 31 March of each year, the installation operator must submit an emission report to the NEa that has been verified by an independent third party. Based on this report the operator must, at the latest by 30 April, surrender sufficient emission allowances to cover the installation's emissions during the preceding calendar year. If the operator does not surrender sufficient allowances to the EU Registry he is charged a penalty of €100/tonne of CO<sub>2</sub>. Payment of the penalty does not release the operator from his obligation to surrender sufficient allowances. Clearly, an operator may sell excess allowances to third parties that hold an EU Registry account or, if necessary, purchase additional allowances from such third parties to cover its installation's emissions. Under and pursuant to the Linking Directive 2004/101/EC emission reduction units (ERUs) or certified emission reductions (CERs) from Joint Implementation (JI) projects and the Clean Development Mechanism (CDM) may be used by a party to meet its obligations under the EU ETS.

### Emission allowances

The Dutch Emissions Authority may only allocate emission allowances to parties that have obtained an emission permit. The permit as such does not contain any emission requirements or grant any rights to emission allowances. From a civil law perspective emission allowances qualify as property rights (*vermogensrechten*) although it is not possible to attach them (*beslag leggen*) or encumber them with a pledge (*pandrecht*) or usufruct (*vruuchtgebruik*). They may, in principle, be bought and sold to third parties, provided that they hold an EU Registry account. Once the transfer of an emission allowance has been completed, the invalidity (*nietigheid*), nullification (*vernietiging*) or termination (*ontbinding*) of the title subject to which they were transferred (sales agreement), can no longer affect the validity of the transfer.

## D.3 Carbon capture and storage

### CCS policy

According to the 2016 Energy Report, the Dutch government recognises carbon capture and storage (CCS) as a potentially cost-effective option for the reduction of CO<sub>2</sub>-emissions but, as in other EU Member States, the development of CCS in the Netherlands is slow. The Energy Agreement on Sustainable Growth (see: D.4, below) states that government will take steps to produce a long-term strategy regarding the role of CCS in the transition towards an entirely sustainable system.

In 2011, the MEA stated that it would be diligent to ensure that the Netherlands has the know-how required to, if necessary, implement CCS technology to capture and store large-scale CO<sub>2</sub> emissions by the electricity generation industry. In this context, the MEA decided that he would in the medium term only support CCS demonstration projects at sea but not on land due to possible risks, environmental effects and public perception. It is estimated that the storage capacity of depleted gas fields at sea is sufficient to store CO<sub>2</sub> at an annual rate of 24 megatons for a period of 50 years. The Groningen gas field, once depleted, has an estimated storage capacity of nine gigatons.

## Regulatory framework

The CCS Directive has been implemented pursuant to the Mining Act. In summary, the Mining Act provides that it is prohibited, without a licence, to store substances (including CO<sub>2</sub>) or engage in prospecting for CO<sub>2</sub>-storage complexes. An application for the permanent storage of CO<sub>2</sub> must include, among other things, a description of the storage complex, the total amount of CO<sub>2</sub> to be stored, information on the composition of the CO<sub>2</sub>, information on the timing and methods of injecting the CO<sub>2</sub>, a description of risk management measures and a description of the financial security that will be provided. A licence holder is, in principle, required to provide third party access to his CO<sub>2</sub>-storage complex.

## CCS projects

Starting around 1990, CCS research in the Netherlands (and Europe) was carried out in a number of dedicated single-disciplinary national and European R&D projects. Since 2004, Dutch national CCS research has been done under the CATO programme umbrella, covering the full CCS chain and addressing both fundamental and applied topics (including regulation, safety and public perception). CATO is an acronym for CO<sub>2</sub> *Afvang, Transport en Opslag* (CO<sub>2</sub> capture, transport and storage). In 2015 the CATO programme entered its third phase. It involves national (through TKI – the Dutch Top consortium for Knowledge and Innovation) collaboration covering mainly technical and legal issues and international collaboration (through CATO-CLIMIT and CATO-ACT) with a particular focus on CO<sub>2</sub> utilisation and transport and chain integration as well as the acceleration and maturing of CCS technology through innovation and research activities.

The ROAD project is a large-scale demonstration project managed by a joint venture between Uniper Benelux (previously E.ON) and Engie Energie Nederland (previously GDF Suez). ROAD is an acronym for *Rotterdam Opslag en Afvang Demonstratieproject* (Rotterdam capture and storage demonstration project). The project's intended storage partner is Oranje-Nassau Energie. The project involves using post-combustion technology to capture, as of 2019/2020, over one million tonnes of CO<sub>2</sub> a year from Uniper's new coal-fired power plant (MPP3) located in the Rotterdam port area for permanent storage in Oranje-Nassau's depleted Q16-Maas offshore gas field. The CO<sub>2</sub> may, in the future, be used as a buffer storage for the supply of CO<sub>2</sub> to greenhouses in the Rotterdam port and industrial area via the OCAP (organic CO<sub>2</sub> for assimilation by plants) network. Due to the fall in the price of emission allowances, the financing of the ROAD project, despite financial support from the Dutch State and the European Commission, has not yet been secured.

## D.4 Renewable energy

### State of play

In the Netherlands biomass is by far the most important source of renewable energy (70%) followed by wind power (20%), with other sources, such as hydropower, solar power, geothermal energy and ambient heat making only a small contribution. It is therefore not surprising that many policy and legal instruments are aimed at sustaining the use of biomass in power and heat generation and scaling up the use of onshore and offshore wind power for the generation of renewable

energy. In this context, the Dutch government aims to increase current onshore wind capacity from 3,000MW to 6,000MW in 2020, mainly by increasing the yield per km<sup>2</sup>, redeveloping inefficient wind farms and incentivising public participation in wind projects with a capacity above 15MW. The government further aims to increase the current offshore wind capacity of 357MW to 4,450MW in 2023. There are currently three offshore wind farms operational in the Netherlands: the Offshore Wind Farm Egmond aan Zee (108MW) operated by Shell/Nuon, the Prinses Amalia Offshore Wind Farm (120MW) operated by Eneco, and the Luchterduinen Offshore Wind Farm (129MW) operated by Eneco and Mitsubishi. The Gemini Offshore Wind Farm (2 x 300MW; in which Northland Power Inc. holds a 60% stake) is expected to become operational in the second half of 2017. For the remaining 3,500MW required to meet the target, the Netherlands' government is tendering offshore wind farm ("OWF") locations in combination with the SDE+ subsidy in five 700MW tender rounds between 2016 and 2019. OWF locations Borssele I and II were awarded to DONG Energy which will receive a maximum subsidy of 7.27 €/ct/kWh. OWF locations Borssele III and IV were awarded to a consortium consisting of Shell, Van Oord, Eneco and Mitsubishi/DGE which submitted the lowest tender bid at 5.45 €/ct/kWh. Both tender bids were significantly lower than the maximum subsidy that the government was prepared to pay. The three remaining tender rounds are planned for 2017, 2018 and 2019. In order to achieve the offshore wind target, the MEA has announced his intention to make available an amount of approximately €12 billion consisting of SDE+ exploitation subsidies (€8 billion) and the costs of the offshore power grid (€4 billion) up to and including 2024.

### Renewable energy policy

The most important policy documents relating to renewable energy in the Netherlands are the National Action Plan for Energy from Renewable Sources and the Energy Agreement for Sustainable Growth.

The National Action Plan, drafted in 2010 pursuant to the Renewable Energy Directive, sets out how the government intends to ensure that 14% of its gross energy consumption in 2020 will originate from renewable sources. The plan lists the following core instruments that will be employed to achieve this goal:

- the Renewable Energy Production Incentive Scheme (*Besluit stimulerend duurzame energieproductie*) (SDE+) which is a financial instrument used to subsidise the production of renewable electricity, gas and heat (including combined heat and power);
- the Biofuels Blending Obligation (*Bijmengverplichting Biobrandstoffen*) which requires fuel suppliers to blend a minimum percentage of biofuels in transport fuels;
- the Government Co-ordination Scheme (*Rijkscoördinatiering*) which aims to facilitate the co-ordination and thus accelerate licensing for large scale energy infrastructure projects and renewable energy projects; and
- the Environmental Permitting (General Provisions) Act (*Wet algemene bepalingen omgevingsrecht*) aimed at fast-tracking and increasing the transparency of licensing for smaller scale renewable energy installations.

The Energy Agreement for Sustainable Growth was entered into in 2013 by over forty stakeholders in the Netherlands' energy sector, including central, regional and local government, employers' associations and unions, nature conservation and environmental organisations and other civil-society organisations and financial institutions. The agreement aims to achieve the following objectives: (i) a saving in final energy consumption averaging 1.5% annually, which is expected to be more than enough to comply with the Energy Efficiency Directive (2012/27/EU), and in this context a 100 petajoule saving in the country's final energy consumption by 2020; (ii) an increase in the proportion of energy generated from renewable sources from 4.4% (in 2013) to the above-mentioned 14% in 2020 followed by a further increase to 16% in 2023, and (iii) the creation of at least 15,000 full-time jobs, largely in the short-term.

#### SDE+ subsidy

The SDE+ exploitation (production) subsidy is the Dutch government's primary instrument for the financing of renewable energy production. The SDE+ subsidy scheme is set out in the Renewable Energy Production Incentive Scheme (*Besluit stimulerend duurzame energieproductie*) and a number of ministerial regulations implementing the scheme.

In broad outline the subsidy scheme works as follows. The subsidy scheme is open to the operators of installations that use renewable energy sources. Renewable energy sources are: wind, solar energy, terrestrial heat, ambient heat, osmosis, wave energy, tidal energy, hydro power, biomass, landfill gas, sewage treatment plant gas and biogas. The operator must apply for a subsidy at the Netherlands Enterprise Agency (*Rijksdienst voor Ondernemend Nederland*, RVO) before the installation becomes operational. The RVO will, in principle, decide on the application within 13-26 weeks. If a SDE+ subsidy is granted the relevant installation must become operational within a fixed number of years (generally 4 years), in order to prevent the allocated subsidy from not being used.

SDE+ is a feed-in premium subsidy scheme which subsidises the difference between the cost price of producing renewable energy and the revenues that the operator of the renewable energy installation (the producer) receives for the renewable energy produced, up to a certain subsidy cap (ie, the average power price achieved, set annually by the MEA). In other words, the subsidy base amounts (the costs), which are set annually by the MEA based on advice from the Energy research Centre of the Netherlands ("ECN"), are fixed per technology (renewable energy source) for the duration of the subsidy period, generally 12-15 years, and are subsequently reduced by the 'correction amount' (the revenues).

The SDE+ is subject to one subsidy budget ceiling, which entails that the different technologies compete for the same budget. Therefore, if the budget ceiling would be exceeded by granting a subsidy application, the excess part of the application is denied. Subsidies are generally granted on a first come first served basis (except for offshore wind subsidies which are granted pursuant to a tender system), but the SDE+ for any particular year is opened up in phases, which means that the operators of technologies requiring a lower base amount (lower costs) can apply for subsidy earlier than technologies that require a higher base amount (higher costs), thus increasing the chance that their application will be granted. Operators that are prepared to

accept a lower subsidy (lower base amount) can however apply for subsidy in an earlier phase.

The RVO pays out advances on the subsidy amount granted on the basis of guarantees of origin (*garanties van oorsprong*) submitted by the operator. Guarantees of origin are issued to the operator by CertiQ (renewable electricity and combined heat and power) and Vertogas (renewable gas), both 100% subsidiaries of the TSOs for power and gas, in electronic form as proof that a certain volume of renewable energy was actually produced. Guarantees of origin for renewable electricity can be traded internationally between a number of European countries, but the trade in guarantees of origin for renewable gas, if any, is largely limited to the Netherlands.

The MEA has, not surprisingly, informed parliament that an SDE+ subsidy budget will also be available in 2017, but the eligible technologies and base amounts have yet to be announced.

## D.5 Biofuel

### Regulatory framework

According to the Renewable Energy Directive, each EU Member State shall ensure that the share of energy from renewable sources in all forms of transport in 2020 is at least 10% of the final energy consumption of energy in transport in the Member State. In the Netherlands this obligation has been implemented via the Environmental Management Act (*Wet milieubeheer*), the Decree on Renewable Energy in Transport 2015 (*Besluit hernieuwbare energie vervoer 2015*) and the Renewable Energy in Transport Regulation 2015 (*Regeling hernieuwbare energie vervoer 2015*). This legislation contains a new system designed to achieve the above-mentioned goal, which entered into force in 2015 and works as follows.

### Booking, trading and supplying for end-use

The above-mentioned obligation is largely achieved by obliging suppliers of transport fuels (such as gasoline or diesel) for end-use in rail or road transport to blend these with at least 10% biofuels by 2020. The new system, which is somewhat similar to the CO<sub>2</sub> emissions trading system, involves booking biofuels in exchange for Renewable Energy Units ("REUs"), trading REUs and supplying transport fuel for end-use with an obligation to surrender REUs. It revolves around three categories of companies: bookers, traders and suppliers for end-use. All of these companies are on the Register of renewable energy for transport. A company may belong to more than one category at the same time, so may be both a booker and supplier for end-use.

A booker is a company that brings volumes of biofuel on to the Dutch market that are destined for transport end-use, and chooses to book these volumes of renewable energy in the Register and receive one REU in its account for each gigajoule of renewable energy booked. The biofuels must be sustainably produced and the process (the biofuel chain) must be secured by a sustainability system recognized by the European Commission. A booker may book liquid or gaseous biofuels as well as electricity supplied to road transport vehicles. A booker may book renewable energy destined for transport end-use in a year until 1 March of the following year. Once a biofuel has been booked the booker may not (again) trade it as a sustainable biofuel. This is to avoid that a volume of biofuel is booked twice or used to meet the biofuel target of another EU Member State.

A booker may trade the REUs in his account until 1 April of the same year.

The supplier for end-use (ie, the supplier to the gas station operator) has an annual obligation for the percentage of renewable energy that he must employ. Each supplier for end-use must report the volumes of gasoline, diesel, etc., that it has supplied in the previous year, to the Dutch Emissions Authority (*Nederlandse Emissieautoriteit, NEa*), which has the task to supervise and enforce the performance of the above-mentioned legislation. Suppliers for end-use must have sufficient REUs in their account before 1 April to meet their annual obligation. On 1 April the NEa writes off the number of REUs required to cover the supplier's annual obligation. If a supplier is short, then he must compensate the shortage in the relevant year. A shortage must be eliminated before a supplier is again allowed to sell REUs. If the shortage can be blamed on the supplier, the NEa may impose an administrative penalty on the supplier. In view of the fact that it is impossible to predict exactly how many REUs will be required, a supplier may save a maximum percentage of REUs.

## E. Nuclear energy

### Legal framework

The Netherlands is a party to a substantial number of international nuclear treaties, a member of the International Atomic Energy Agency (IAEA) and a member of the European Atomic Energy Community (Euratom).

The Netherlands' Nuclear Energy Act and related supporting legislation is applicable to nuclear energy, nuclear installations, fissionable materials, ores, radioactive substances and devices that emit ionising radiation. To protect the public and the environment against the associated hazards, the Act incorporates a permitting system which entails that a permit from the MEA is required for, among other things, (i) the transport, use, import, export and disposal of fissionable material and ores, and for (ii) establishing, operating, modifying and decommissioning a facility in which nuclear energy can be released. The Act further prescribes a registration system in relation to the use, transport, import, export or disposal of fissionable materials and ores.

The Nuclear Energy Act allocates various responsibilities under the Act to a number of different ministers including the MEA and the Minister for Infrastructure and the Environment (MIE). In order to maintain an effective system of checks and balances, the MEA is primarily responsible for nuclear energy policy, whereas the supervision of nuclear activities has been assigned to the Authority for Nuclear Safety and Radiation Protection (*Autoriteit Nucleaire Veiligheid en Stralingsbescherming, ANVS*), established in 2015, which acts under the MIE. The ANVS is scheduled to become an autonomous administrative authority in July 2017.

### Borssele nuclear power plant

The only operational nuclear power plant in the Netherlands is located at Borssele in the province of Zeeland. The construction of the Borssele plant was initiated in 1969 and it became operational in 1973. The plant is owned by N.V. Elektriciteits-Produktie maatschappij Zuid-Nederland EPZ (EPZ). The shares in EPZ are held by DELTA Energy B.V. (70%),

which in turn is owned by the province of Zeeland (50%) and a number of other Dutch provinces and municipalities, and Energy Resources Holding B.V. (ERH) (30%), an RWE subsidiary. To safeguard the public interest various instruments are in place, among which is an agreement with the Dutch state, pursuant to which a change of control over ERH must be reported to the MEA. If the intended change of control gives rise to public interest issues (public order, public safety or public health), the MEA can object to or, as a last resort, decide to block the intended change of control, subject to ERH's right to challenge such decision in court.

The Borssele plant has a net capacity of 485MWe and is responsible for 2-4% of the annual power production in the Netherlands. EPZ sells the electricity produced by the Borssele plant to Delta and RWE, the 'tollers'. In 2006 EPZ, its shareholders and the Dutch State signed the Borssele Agreement (*Convenant Kerncentrale Borssele*), which provides that EPZ must initiate the decommissioning of the plant by 31 December 2033 at the latest. In this context the bankruptcy-remote Foundation for the Management of the Borssele Decommissioning Funds was established by EPZ to accumulate sufficient funds over the years through the sale of electricity from the Borssele plant to pay for the decommissioning of the plant as of 2033. The decommissioning costs are estimated at EUR 500 million. At present, power prices are low and they are expected to remain low in the short to mid-term. This is a problem for Delta, which is already in financially dire straits, and RWE who, as tollers, bear the financial risk. This situation, by extension, poses a risk for EPZ if one or both of the tollers is no longer able to perform its financial obligations. Since the 2011 Fukushima nuclear disaster and the German government's decision, in the same year, to phase out nuclear power, there have been no plans in the Netherlands for the establishment of any new commercial nuclear power plants.

### Other nuclear facilities

The Dodewaard power plant (60MWe), which became operational in 1969, prior to the Borssele plant, was shut down in 1997. Its owner, GKN, has kept the plant in safe enclosure since 2005, which entails that the facility has been shut down and that all nuclear fuels have been removed. Further decommissioning has been deferred to 2045. The Netherlands also has a number of nuclear research reactors including the high flux reactor (HFR, 45MWth) in Petten owned by the EU and managed by Nuclear Research and consultancy Group (NRG), a 100% subsidiary of the Energy research Centre of the Netherlands (ECN), and a low flux reactor (LFR, 30kWth) in Petten that is owned and managed by NRG. LFR's business operations ceased in 2010. A decommissioning licence for the LFR was granted in 2014. NRG is developing a new research reactor in Petten to replace the HFR, which produces a third of the medical isotopes used world-wide. This new Pallas-reactor can be operational in 2024. Finally, there is the Higher Education reactor (HOR, 3MWth) which is used by the Reactor Institute of Delft (RID).

### Urenco

Most nuclear plants use low enriched uranium as their power source. In the Netherlands, this nuclear fuel is produced by the Urenco uranium enrichment facility (6200tSW/year), owned by the Netherlands (1/3), the United Kingdom (1/3) and German

energy companies E.ON en RWE (1/3). The United Kingdom has indicated that it wishes to sell its shares in Urenco. In this context, the MEA recently informed the Dutch parliament that the Urenco shareholders have not been able to reach agreement on a bill and a new corporate structure of the Urenco Group aimed at securing the public interests of safety and non-proliferation in the event that one or more shareholders such as the United Kingdom, sell their shares. The Netherlands has no intention to sell its interest in Urenco until the aforementioned public interests are sufficiently secured.

## COVRA

The Central Organisation for Radioactive Waste (*Centrale Organisatie voor Radioactief Afval N.V.*, "COVRA"), owned by the Dutch State, has a monopoly under the Nuclear Energy Act on the treatment and storage of radioactive waste. This waste is stored in a long term storage facility in Borssele, in the province of Zeeland. The ownership of the waste is transferred to COVRA and COVRA charges the suppliers of radioactive waste for the storage. The geological final disposal of radioactive waste is planned for 2130 at a yet to be determined location.

## F. Upstream

The basic principles underlying gas production in the Netherlands and the structure of the gas production industry are set out under B.1, above.

### Legal framework

The exploration and production of gas, both onshore and offshore, is regulated under the Mining Act (*Mijnbouwet*), the Mining Decree (*Mijnbouwbesluit*) and the Mining Regulation (*Mijnbouwregeling*). The Act is applicable to oil and gas that is more than 100 meters below the earth's surface, to terrestrial heat that is more than 500 meters below the earth's surface and to the storage of substances, including CO<sub>2</sub> (see: D.3, above). Oil and gas below the earth's surface is owned by the Dutch State, but the ownership transfers to the production licence holder upon the extraction of the oil or gas from the subsoil.

The Mining Act is based on a licensing system. The exploration or production of oil, gas or terrestrial heat requires an exploration or production licence as the case may be, and the storage of substances requires a storage licence. A production licence will only be granted if it is plausible that the minerals (oil and/or gas) in the area to which the licence would apply are economically extractable. Every licence is applicable to specified minerals, in a specified area for a specified period of time, for example 5 years for an exploration licence and 20 years for a production licence. Licences can be split, merged, transferred or extended and the licence area can be reduced upon request by the licence holder.

Licences are granted by the MEA within 6-12 months. The licence holder generally consists of a number of mining companies, one of which is designated with the MEA's consent as the operator (ie, the party that performs the actual exploration and/or production activities) while the other companies participate financially (ie, contribute to the costs and share in the revenues). A licence applicant is assessed on his technical and financial capabilities, the proposed exploration or production method and the efficiency and sense of responsibility with which previous exploration and/or

production activities were performed. A licence is, in principle, granted in competition, meaning that a licence application is published so that other parties may apply for the same licence, with one main exception: an exploration licence holder that has demonstrated the presence of minerals in his licence area will receive a production licence for these minerals. The MEA may withdraw a licence on a limited number of grounds, including a change in the technical or financial capabilities of the licence holder or if the licence holder is not acting in accordance with the law or the licence.

The licence holder, in particular the operator, is responsible for the performance of production activities in accordance with the extraction plan which requires MEA approval. The licence holder must take all measures that may reasonably be expected to prevent harm to the environment, damage due to soil movement, unsafe situations and detrimental effects on the systematic management of the oil and/or gas deposits. Finally the licence holder is responsible for the decommissioning of offshore mining installations that are no longer in use. The licence holder must, upon the MEA's request, provide financial security in relation to his liability for soil movement and/or decommissioning costs.

The Dutch State participates in exploration and production activities via EBN B.V., a fully state-owned company. EBN participates in exploration activities upon the licence holder's request, and in production activities unless the MEA decides otherwise. EBN and the licence holder are required to enter into an agreement of cooperation for exploration or production activities which provides that the licence holder will take an interest of 60% in these activities, while EBN takes a 40% interest (ie, contributes to the exploration or production costs and shares in the revenues).

The licence holder has certain financial obligations. These include the duty to pay (i) surface rental (*oppervlakterecht*) based on the surface of the area that is being explored (offshore only) or produced, (ii) severance tax (*cijns*) based on the production turnover, (iii) the State profit share (*winsttaandeel*) based on the production earnings, and (iv) a one-off payment to the relevant province (*afdrachten aan de provincie*) based on the surface of the area occupied by the production facilities.







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