



A Smart EU Energy Policy

Final report

April 2010

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The Clingendael International Energy Programme (CIEP), the Loyola de Palacio Programme of the European University Institute, the Fondazione Eni Enrico Mattei (FEEM) and Wilton Park (WP) organised a four-tier project to discuss the potential for a smart EU Energy Policy. The project consisted of three workshops where academics discussed the various interactions between the three core objectives of EU energy policy with stakeholders from governments, regulators, and industry. Following the three workshops a conference took place to examine the workshop reports and to formulate overall project conclusions and recommendations. The objective of the project was to come out with a set of “smart” conclusions and recommendations for the 2010 EU energy policy review. The deliberations at the four project meetings greatly informed the views expressed in this document, but those views belong to the authors only and do not necessarily represent those of individual participants at the meetings or of the four supporting organisations.

I. Introduction

We are in desperate need of a EU Energy Policy. Outcries for it come from press reports, especially when something is happening (again) for instance with East-West gas flows. Apparently, the EU is either lacking such a policy, or is not adequately communicating it. Or maybe another question comes up: is it smart enough? The facts are that, yes, there is indeed a EU Energy Policy. It is a policy based on a vision, a vision with three components. The policy is aiming for “markets, competition and efficiency”, it is equally focussing on “a sustainable energy economy”, and thirdly, it wants to “secure the EU’s energy supply”. From a historic point of view, one could even argue that finally, after some 50 years since its inception, we have one, as the European Council agreed in the spring of 2007 on such a three-tier approach.

Formulating the policy is one thing. Starting to work on implementing paths, as well as developing policy instruments and legislative frameworks, is the next and more difficult one. On “the market”, a comprehensive 3rd Energy market package was developed. On “the climate” a comparably challenging Green Package was agreed upon. And on “supply security” a rather fragmented 2nd Strategic Energy Review was put on the table. In addition, the Commission has indicated that “the EU needs to begin preparing its energy future in the longer term” and that “the Commission will therefore propose to renew the Energy Policy for Europe in 2010 with a view to charting a policy agenda for 2030 and a vision for 2050, to be supported by a new Action Plan”.

Three objectives, three separate action lines. Balancing the three objectives in an integrated approach is challenging and difficult. To what extent is the market approach consistent with the other two policy packages? What impact does a climate package with tradable emission rights and non-tradable targets for green energy have on the market designs for gas and electricity? Are the necessary investments in new pipes and wires for securing our energy supplies sufficiently coming under the prevailing regulatory framework? Or, to put it differently, are we smart enough in the way in which we are making implementing steps in order to meet our stated objectives?

II. EU Energy Policy reconsidered

It is useful to reflect briefly on EU energy policy per se before the outcomes of the three workshops are discussed and a number of recommendations for a smart EU Energy Policy are proposed. EU energy policy is basically a basket of a number of policies that are concerned with energy markets and energy issues. It did not come from the member states, nor did it emerge as an integrated concept from the Commission. It did not come from the energy sector either, a sector that traditionally is one of the most conservative ones in the EU. What the EU did agree upon in its 2007 Spring Council was the adoption of “three

mantras” as a basis for a variety of policy and regulatory proposals and actions. Three mantra’s, “Kyoto, Lisbon and Moscow”, covering the issues of climate change, competitiveness and supply security. Let’s look at them separately.

On Kyoto, the green issue. It was built upon the fact that energy related environmental issues became in the late 1980’s a truly European domain to fight acid rain and to save migrant birds and fish. When Kyoto happened, the EU adopted it, as earlier attempts to start a EU carbon tax failed dramatically. The EU’s leadership produced two surprises, one to translate Kyoto rather overnight into a market based system, i.e. the Emissions Trading Scheme (ETS). The other one, launched without very much analytical basis so it appeared almost as some kind of “gift from heaven”, was about long term (i.e. burdening successors) non-binding common “political” targets in the form of the ‘Triple Twenties’ for 2020.

On Lisbon, the market issue. Lisbon was born in 1986 when the European Community enacted its project to create a Common Market by 1992. The Single Act for the Internal Market was core business for the EEC, the Economic Community. The goal was to have market based economies with no internal barriers to trade, and a centralised monitoring system to review progress and to solve ongoing discrepancies. Energy was included in the plans, but made very slow progress due to the domination of national monopolies with their strong national government ties and behaviours (including with strategic national interests, rightly or wrongly) and many cross-subsidisations throughout the value chain. Many battles emerged with UK market-led Thatcherite approaches. Two steps were taken during 1990-1991 on cross border transits in gas and electricity, followed in 1996 to 1998 with a first liberalisation package. Market liberalisation gained momentum in 2003 with a more comprehensive second package, and then a third one in 2009 that is probably not the final word.

On Moscow, the security of supplies. Russian energy (gas) supplies played an increasingly important role for the EU since the early 1980’s. The peaceful dissolution of the Soviet empire gave opportunities for energy cooperation initiated in some national capitals and hence not applauded in Brussels. The question for Brussels was how to react in the absence of a formal role. The foreign policy dimension was very political and energy was not on the radar screens. The reaction from Berlaymont was to sell the internal market paradigm to the East, an approach that met with some success except in Moscow. Market opening was not in Russia’s interest, whereas maximising producer rents in the value chain was. After the Commission’s several attempts from the 1960’s onwards to start “une politique communautaire d’approvisionnement énergétique”, including the severely defeated initiative of its Vice President Loyola de Palacio in 2003, the 2005 “winter energy panic” in

London, and the 2006 Ukrainian gas crisis, the creation of an EU Energy Policy combining Kyoto, Lisbon and Moscow suddenly emerged.

Looking now somewhat closer at the three cornerstones, Lisbon, Kyoto and Moscow, and their respective interrelations, we note the following.

II-a The Lisbon dimension

A competitive energy market requires by definition pro-competitive regulation and pro-competitive industry structures. Although directives have been agreed upon and stringent compliance policy is developing with respect to national implementation, member states are free to go further than the requirements in the directives or to provide further details and refinements. This is putting further pressures on the harmonisation process as the devil is always in the detail. The same observation applies to the role of the National Regulatory Authorities (NRA's), which basically have a national focus that does not always allow looking at cross-border issues in the wider EU interest. The more concrete and important actions for crossing borders are found in EU Regulations. They are, however, still under control of the member states due to the time consuming and complicated comitology-process with its qualified majority loading. Industry restructuring can only take place in the context of the EU's Competition Policy when mergers and acquisitions are on the table or when competition cases ("smoking guns") are at stake.

In the Lisbon-Moscow relationship, the Competitive Internal Energy Market is the core of the policy, also determining the EU's external security of supply (SoS) policy! There is no doubt on that. But beyond that statement there is silence and a lack of concrete visions and strategies. Are we really to believe that open and friendly international markets will deliver timely and sufficient upstream infrastructures to ship the gas we think we need? And what about liquefied natural gas (LNG) and terminals? And what about our internal needs for expanding infrastructure in gas and electricity, including the wider dimensions of "ring" concepts and super-grids? And therefore, is there a need for a full rethink and an entirely redefined approach?

Similar thoughts are coming up for Lisbon and Kyoto, where we see already right now that heavily subsidised renewable energy sources (RES) are complicating and even damaging grid operation and the functioning of the market. Will further massive RES deployment put even stronger pressure on the rest of the EU energy markets and grid management?

II-b The Kyoto dimension

The CO₂ market needs to be tightened and harmonised across the EU to be effective. This calls for a strong and centrally regulated EC role, including effective monitoring and a centralised auctioning process. This is probably unfeasible with Member states (MS) comitology, as at least one argument relates to the fiscal sovereignty paradigm. Further calls for a carbon tax or even emission performance standards are adding to the debate. Massive RES requires a strong effort to “squeeze” actual EU RES potentials, which can only deliver when there is open access to all EU RES resources and an open and integrated EU RES market. Today’s RES policy is still however completely nationalised and politicised by national capitals. The 2020 “three twenties” targets require strong EU deployment of advanced low/zero carbon technologies. On the road towards “2050” strong innovation push and pull programmes are necessary, not only requiring massive investments but even more so stable and effective regulatory regimes.

Kyoto and Lisbon. Basically the CO₂ market is working in a satisfactory way, but uncertainties remain as to the longer-term assurances of the price of carbon in relation to massive investment needs in RES, energy efficiency and low/zero carbon technologies. RES policy is not working at all; national dreams prevail and are blindly subsidised, pushing efficient RES deployment out of the market. Kyoto is frustrating Moscow as RES is discouraging upstream investment in gas that is still needed for decades to come. Supply security is therefore not well coordinated with demand security. RES and “clean development mechanisms” (CDM) could be frankly used as a lever in EU foreign policy. Is that an option, and if so how?

II-c The Moscow dimension

Our external SoS policy is focussed on “embedding” foreign economies in the large, peaceful EU internal market. But what happens if foreigners do not jump in? What will the EU reaction be? Is there a “no policy” EU policy? EU external SoS policy has NO infrastructure development plan and NO energy long term contracting framework to make deals with foreigners. We are good at wording EU external policy, but lack concrete means and instruments.

Moscow and Lisbon. There is no doubt that the EU external SoS policy has been supportive of the internal market in the past, notably by suppressing gas destination clauses. But today the content is mainly “endless speeches” and the Commission cannot sign any energy contract. Having no clear vision on infrastructure development and long term contracting

policy does not help the internal market. The EU SoS external policy cannot end in a “Nabucco only” game.

Moscow and Kyoto may be moving in the direction of making at least solar RES and CDM as well as gas a core part of EU SoS with Mediterranean countries.

III. The first workshop

Discussion was held on the *internal energy market design and its consequences for energy supply security and climate change policies*. In three concluding sessions the workshop focused on:

1. The interaction of market design and cross border issues with climate change policy components:
 - On ETS: a single exchange scheme all over Europe will remove an important cause of possible cross-border problems, but the resulting change of the merit order might introduce changes in power flows due to differences in energy mixes, making grid issues more salient.
 - On RES: keeping the balance between exposing them to the market while protecting them from excessive market risks would allow their development in line with efficient balancing in the short run and efficient location in the long run.
 - On other low-carbon technologies: as there is no single technology policy, interdependencies through interconnected grids bring the risk that cross-subsidies can emerge, with consequences not only for economic transfer between countries but also and more importantly for efficient operation and investment in the power sector.
2. The interaction of market design and cross border issues with power supply security, generation investment and transmission infrastructures, with general consensus on:
 - The theoretical superiority of day-ahead, intraday and real time nodal pricing for short run efficient scarcity and locational pricing. In the long run, indicative planning on generation adequacy and transmission developments are needed to help coordination of investments.
 - The need and the role of long term contracts for efficient generation investment, but questions about the need for capacity markets are still unclear.

- The existence of institutional obstacles for efficient cross border system balancing. Progress is however being made, including developments in the direction of a limited number of coordination centres, regional market couplings and coordination of power exchanges and wholesale markets. These developments could further result in European markets closer to pool models.
3. The interaction of market design and cross-border issues with “gas supply security”, gas imports, infrastructure and transits:
- There is an increasing need for more cross border transits in the gas network, which means either a higher rate of utilization or new gas network infrastructure. This infrastructure can bring high value to the gas system through the management of uncertainty, promoting competition and leading to a more efficient gas market.
 - Present remunerations for gas networks via systems of regulated tariffs are not giving the right incentives for further development. In addition, the current duration of regulatory periods (3 to 5 years) are not adapted to investments with long-term life spans.
 - The European Agency for the Cooperation of Energy Regulators (ACER) and the national regulators should create a framework where long term contracts for gas transmission can emerge with a limited size for entry-exit areas and with stability of tariffs as the best incentives for transmission system operators (TSO’s) to invest.

IV. The second workshop

A closer look was taken at *the Green Package approach and its consequences for internal energy market design and the implementation of the 2nd Strategic Energy Review*. In wrapping-up, ideas were expressed that could be considered as useful inputs into the overall reporting on the project:

1. On RES, four issues are particularly noteworthy:
 - There is a need to address new business models for TSO’s, given their impact on policy and regulatory agendas.

- The policies of “feed-in-tariffs” could generally be considered as success stories, but some final “wait-and-see” views were expressed as well.
 - The development of a “green market” for electricity, such as Guarantee of Origin systems and Renewable Energy certification, is loaded with uncertainties and could be further explored.
 - There is huge potential within the EU for the deployment of bio-energy and biofuels, but an integrated policy is necessary linking agriculture, trade, energy and environment. The European policy umbrella on agriculture could be a strong advantage in promoting bio-energy.
2. On fuel mix, a EU vision and strategy seems appropriate, but questions were raised about the viability of an overall EU policy. Since many member states lack comprehensive policies on their national fuel mix, an integrated EU policy seems to be out of reach. Looking at developments within national energy systems, however, the role of natural gas seems to remain or will become a key element.
 3. On ETS, the point of no return has been reached, but more clarity is needed for the post 2012 longer-term framework. Industry in particular is sending the message that ETS in its current form is insufficient to drive an energy transition and change the fuel mix in Europe. ETS as such is necessary but not sufficient, and complementary policies are needed, such as a system of Emission Performance Standards (EPS).
 4. With respect to ACER, the basic structure has been defined, although some question marks still remain. One of the key observations is that successful implementation will strongly depend on the “regulatory behaviour” and cooperativeness of NRA’s. Secondly, the TSO’s are quite active in using their early-mover’s advantage to influence regulation through the European Network of Transmission System Operators for Electricity (ENTSO-E), established in December 2008.
 5. On regional issues, more focus and attention on the development of regional markets seems to be necessary, including effective EU mechanisms on assuring coherence and consistency.

V. The third workshop

The *Strategic Energy Review (SER)* and its consequences for internal energy market design and Green Package policies were examined. Discussions brought out the following views:

1. EU energy scenarios, security of supply and climate change, and EU future gas import requirements. European policy risks sending mixed messages to gas producers. On the one hand they are asked to make the necessary longer-term investments in gas, on the other hand the Green Targets are attempting to reduce gas demand. If investments are not made and if the targets are not met, there is a risk of medium term supply crunches. Smart EU policy requires:
 - A more coherent and credible EU approach that uses its scenarios for consultations with producer countries and market participants.
2. The external energy dimension, the role of Russia and the Caspian for EU gas supplies, require smart policies:
 - To be producer focused, acknowledging that maturity of reserves is at the basis of any hydrocarbon value chain, with access to acreage and resources being a key concern and a challenge;
 - To provide an adaptive market based competitive framework for commercialisation of gas that allows interface management between producer resource policies and the EU's internal energy market; and
 - To provide an incentive based framework for phased transits and transportation, with project interdependency and focus on timely delivery of effective and transparent solutions.
3. Internal gas and electricity market design, balancing security of supply versus competition:
 - Integrate markets and enhance cross-border interconnections in gas and electricity infrastructure;
 - Regulatory policies should promote investments in new gas and electricity infrastructure, including for storage and buffering; and

- A common regulatory basis is needed for cross border interconnections, and ACER should be given effective powers in order to contribute to the development of integrated EU energy markets.
4. The role of North Africa in terms of solar electricity supply to Europe, the Solar Plan and Desertec proposals:
- Join and combine the two political/business initiatives;
 - Create a beneficial political and regulatory framework, including options for granting priority status under EU infrastructure projects;
 - Open EU feed-in regulations for power from the deserts;
 - Explore public/private partnerships; and
 - Promote the development and operation of a European and trans-Mediterranean super-grid.
5. Smart EU Policies to promote carbon capture and storage (CCS) and nuclear:
- A viable EU-wide emission trading system capable of delivering standardised carbon prices and/or an effective EU wide carbon tax; and
 - Nuclear power requires local political consent along with levelling the playing field for low-carbon technologies, investor assurances with regard to licensing procedures, and the exploration of regional centres for high-level waste (HLW) disposal and clarifying the position of decommissioning funds.

VI. The concluding conference

During the concluding conference discussion focused on a number of critical issues that came out of the three workshops on the respective pillars.

With respect to the **internal market** pillar, five key items were brought to the fore that need to be further assessed and reconciled:

- the use of long-term contracting; It was noted that there is a barrier to market entry for newcomers, but these contracts are also essential for sharing risks throughout the value chain, particularly in the gas market, and in a sense they do not differ from the long term feed-in-tariff systems for RES;

- the massive deployment of renewable energy; this will need a rebalancing of the costs of related infrastructure (also to be paid by generators), suggesting the use of nodal pricing arrangements; both TSO's and distribution system operators (DSO's) need incentives to contribute, and their role is set to change dramatically;
- the regional market initiatives; sufficient incentives are also needed to drive the cross-border investments that must underpin regional market integration; in addition market coupling, regionally coordinated balancing markets for gas and electricity, more pronounced roles for energy exchanges, and a more effective consistency mechanism are needed; issue of TSO cost-sharing principles for cross border trade and transfers (such as the Inter-TSO Compensation mechanism for electricity) need to be finally solved;
- the role of the regulators; will ACER, heralded as one of the strongest agencies ever created by the EU, be able to meet the "high expectations" put on it?; as to guidelines and network codes, ACER is already lagging behind ENTSO-E with its expeditious work on guidelines and network codes;
- the necessary new investments in infrastructures; the Ten Year Network Development Plans from the ENTSO's signify a milestone as a pan-European vision on the future of the two grids; but it also raises new questions:
 - are the ENTSO's becoming the 'deputy director' of network construction?
 - is enough emphasis placed on the question of how to make the most cost-effective transmission infrastructure investments at both cross-border and national level, notably to accommodate more RES and to enhance (gas) supply security?
 - will the focus remain on the consumer and on competition principles or is there a need to shift towards supply security and sustainability?

The impact of the **Green Package** policies and related issues were identified in the second session:

- a general view held that current RES policy focuses too much on electricity while half of energy consumption does not go into power generation. Energy efficiency, heat storage and cooling, biofuels, solar thermal and combined-heat-and-power (CHP) are relatively neglected.

- RES will have major impacts on grids, not only for electricity but also for gas as it increasingly becomes the prime flexibility source for managing intermittencies (including consequences for gas storage and gas market designs).
- smart grids and demand-side management are important initiatives, but in terms of time-scale and quantitative impact, will they match up against the intermittency issues expected from Europe's RES policy?
- 'bottom-up' initiatives are crucial to meet sustainability objectives and top-down imposition might be counter-productive. If focusing on the objective of lowering emissions, there also appears to be a clear divergence between the price paid for reductions achieved in the RES domain and within ETS.
- ETS is functioning properly, but is so far only working to drive operational questions, not investment decisions. Uncertainty remains on longer-term carbon price developments. Yet the introduction of Emission Performance Standards (EPS) will interfere and take liquidity away from ETS, and is thus quite contested.
- Green Package policies are supporting sustainable supply security. There is an industrial case as well, but what if China becomes a key supplier of solar PV and wind turbines? We should recognize that for some MS RES means just shifting dependency from one country to another. Energy efficiency policies need to be much more focussed and strengthened.
- Governments should not pick low carbon "technology winners"; the case remains for coal with CCS and even more for nuclear on the European energy agenda.
- The complexity of combining RES policy with EU market principles remains a critical issue. Experience shows that RES success stories have been based largely on national promotional policy. But how can we achieve market integration and establish RES trading if we cannot harmonize national RES support schemes? NRA's usually don't have a role in RES.
- Is trade and cost-effectiveness what we want, or the best solution and technology in the long run? High volume deployment and long-term subsidy schemes do not go well together, and public authorities should not pick winners. What if market failure persists and there is a risk of not meeting our RES goals? How can we solve the RES/market discrepancy with better policy?

Attention to the third pillar of **security of supply** has gained new momentum following the Russia-Ukraine gas crises and oil price volatility, with discussion concentrated on the following issues.

- The policy focus is primarily on gas, but the EU is not able to provide demand security for its external suppliers. There are policy and regulatory uncertainties, basically with regard to gas-for-power, due to RES-policies and instruments as well as to coal/CCS and nuclear energy.
- Similar uncertainties concern Russia's gas production. Russia needs huge investment to keep up current export levels, with production from current fields projected to be halved. The EU is Russia's banker. There is strong incentive to build Nabucco as it puts Russian gas supply into a more competitive environment. The gas glut over the next 3-5 years will give the EU an easy ride as the US benefits from shale gas.
- How can we create a competitive market in Europe that will provide greater market incentives for our main suppliers? What price are we willing to pay for security of supply? How can Europe shape the incentives for needed infrastructure and gas storage?
- Local context and development needs should be taken into account for external projects, whether solar energy from North Africa or gas from Central Asia. Solar power from the Sahara is needed to meet regional demand growth, and diverting this supply to the EU risks energy neo-colonialism.
- On gas, simply put, if Nabucco fails, diversification of supply is out of reach for Eastern Europe. Old and new MS are not in same position; the 2006 gas crisis lasted only 3 days, while the 2009 one continued for three weeks and took on a its own momentum. But who is going to pay for pipelines that are not economically viable, and for the energy security of others?
- What is at the core of the EU-Russia relationship? Interdependency with Russia is fine, but Russia needs the EU more than vice versa. The EU focus is on the consumer; in Russia it is on the state. The first step needed is to restore mutual confidence. Ukraine is too big to fail and we might need to pay to stabilise it.
- Be smart on shaping foreign energy policy, as extending the EU's internal principles will bring us only so far. Lisbon provides a step forward and new opportunities. On energy it implies a need for balancing top-down (political) and bottom-up (technical) approaches. But we need more transparency on bilateral deals. The EU is usually

good at taking initiatives but not at selling them abroad. Be modest also as governments do not buy gas themselves.

VII. Let's go smart:

a new vision and 22 recommendations

Finally, based on a concluding session discussing a set of recommendations for a smart EU Energy Policy, the following proposals were formulated:

1. *A new vision*

- **Develop a new integrated energy policy vision that moves beyond 2020.**
 - Consider policy-organising principles such as a 2050 zero carbon objective for the overall EU energy mix.

2. *Integration and coordination*

- **2-1 Enhance internal policy coordination and consistency between the internal market, the external supply dimension and the needs of the low/zero carbon transition process.**
 - Approach global energy issues in the wider context of the “energy/food/water” resource challenge.
 - Make integrated energy policy making within the Commission a “Chef-Sache”, i.e. a responsibility for the highest level, make it a single European Parliament committee responsibility and make it also a single track in Council decision making.
- **2-2 Develop, in cooperation with the International Energy Agency (IEA), a comprehensive overall Energy Market monitoring system that reports regularly on EU relevant energy market developments.**
 - In line with the US Energy Information Administration (EIA), the EU should prepare comprehensive bi-annual energy outlooks for the next 10-15 years in order to facilitate energy strategies for market parties and policy makers.
- **2-3 Develop a systematic review process for supply security standards.**

- As there are no objective criteria for assessing “supply security” (as there are in climate issues and in competitiveness), make use of academic studies to start a discussion on it.

3. *Energy Policy Governance*

- **3-1 Make adequate use of the new legal basis for comprehensive and integrated EU energy policymaking.**
- **3-2 Allow willing Member States to carry out regional European energy policymaking and initiatives, while still preserving overall EU consistency.**
 - Examples of other policy areas could be useful, such as the euro-group, the Schengen-arrangement, and the Pentalateral Forum.

4. *The energy efficiency dimension*

- **4-1 Continue EU Action Plans and make them binding wherever effective.**
 - Label consumer goods such as large household appliances, lightning, and tyres.
 - Develop policies for the building sector to encompass, inter alia, efficient heating/cooling devices as well as energy efficiency norms and standards for houses, office buildings, and apartments.
 - Facilitate and promote decentralised (RES and/or gas based) generation options, including aspects of system integration, infrastructures and governance (Smart City platforms).
- **4-2 Consider the development of white certificate market models at EU-level.**
 - Due account shall be taken of successful deployment in some Member States.
- **4-3 Consider the needs for a EU-policy approach on the deployment of smart metering and other demand side management measures for gas and electricity.**
 - The relevant obligations emanating from the 2009 Gas and Electricity Directives need more precise interpretation.
 - European and other stakeholder platforms for smart metering are to play a role whenever appropriate.
- **4-4 Develop a coherent vision and strategy for the transport sector.**

- The role of electric vehicles, especially when based on low carbon energy sources, in all segments of the transport sector to be assessed, including their potential, their operational needs, and their impact on areas such as infrastructure, scarce minerals, and rare earth compounds such as lithium.
- In addition, trains, boats and planes will have to be included.

5. *The low-carbon dimension*

- **5-1 Strengthen the effectiveness of carbon emission mitigation mechanisms within the EU.**
 - As ETS is necessary but not sufficient, strengthen its impact on low carbon technology options, further enhance market transparency, and organise effective market monitoring at EU-level.
 - Consider mechanisms for boosting investor confidence in stable long-term carbon price developments beyond 2020.
 - Emission performance standards for relevant point sources to be seen as a useful additional obligation to the ETS.
 - Introduce a CCS-obligation for new coal plants commissioned after 2015, in order to boost timely development of this technology.
- **5-2 Create a level playing field for all relevant low or zero carbon technology options for power generation.**
 - Review government support mechanisms, including innovation supporting feed-in tariffs, and make them non-discriminatory between technologies.
 - Consider a separate Schengen-like mechanism for nuclear energy technology deployment, giving due account to enhanced safety requirements.
 - Consider mechanisms to provide government guarantees for risky investments, and government insurance schemes for unforeseen delays in licensing procedures, with a view to enhance long term investor assurances for all low carbon technologies and their enabling infrastructures.
- **5-3 Develop a more pro-active EU-role with regard to the development of nuclear energy in the fuel mix.**

- Develop policy arrangements for final disposal of high-level waste, including the option for shared facilities.
- Promote full and open cooperation between national safety authorities on licensing new nuclear power plants.
- Develop a transparent and confidence-building policy on the independent management of waste and decommissioning funds.
- Consider options for strengthening the role of the Euratom Supply Agency in the context of the forthcoming Nuclear Non-proliferation Treaty Review Conference and other international fora for promoting nuclear fuel supply security under non-proliferation safeguards.
- **5-4 Develop a view on the EU fuel mix, while respecting national sovereignty.**
 - Such a view is needed as a basis for coordinating EU funding for new technologies, including the Strategic Energy Technology Plan.
 - Develop a EU-wide methodology and data exchange for planning new infrastructure, especially grids, including at regional levels, on the basis of different energy technology scenarios.

6. *The infrastructure dimension*

- **6-1 Re-regulate new internal cross border infrastructure (gas and electricity) and create incentives for new investment.**
 - Start rethinking the prevailing regulatory designs for new infrastructure, in order to allow a more robust and cost-effective system with appropriate investor and user assurances.
 - The role of long-term transmission contracts in this context will have to be enhanced, including options for customized practices taking due account of competition policy.
 - Develop a consistent and incentive-based EU framework for building and operating non-regulated, i.e. merchant lines as a further effective facilitator for market opening.
- **6-2 Develop a clear vision and road map for large-scale infrastructure expansion to accommodate large RES-based power generation, coupled with a further expansion of demand side management smart metering and smart grid devices.**

- Such a Road Map should include impacts on system operations in an increasingly integrating market environment and a rethinking of the business models for the TSO's.

7. *The single market dimension*

- **7-1 Coordinate regional market integration.**

- Develop an effective EU mechanism to assure coherency and consistency all along the value chain down to balancing markets; such a mechanism should comprise a clear reference model together with effective political governance arrangements.

- **7-2 Be more explicit and robust on ACER, the new Agency for the Cooperation of Energy Regulators.**

- Allow ACER to organise an explicit, effective and transparent role for itself in relation to the various regional initiatives.
- ACER should have as its prime objective promoting the development of a strong and reliable energy infrastructure.
- Explore under present regulation the possibilities for ACER to be more proactive in strengthening investor confidence for new energy infrastructure.
- ACER should monitor the role of the energy exchanges in the management of cross-border interconnections.
- Organise, locate, and finance ACER in such a way that it will become the final decision-making authority for the EU Network Codes.

8. *The external dimension*

- **8-1 Develop a consistent vision and strategy vis-à-vis external suppliers.**

- On market access and reciprocity issues, create level playing fields.
- On supply-demand dialogues, enhance transparency and understandings on all drivers that influence future supply and demand developments.

- **8-2 Be smart with Russia.**

- Develop an “all-energy partnership” approach on the basis of fairness and effectiveness, with mutual benefits and interests.

- Consider a pragmatic rethink of the Energy Charter Treaty process, for instance by reconvening the Energy Charter Conference.
- **8-3 Be smart on “single voices”.**
 - Organise “common voices” in a pragmatic way.
 - Use the external trade paradigm by making a distinction between trade policy and trade promotion.
 - Develop a coordination and information mechanism for bilateral actions, arrangements and contracts.
- **8-4 Facilitating external gas supplies.**
 - On infrastructure: do not pick winners, but rethink regulatory approaches in order to maximise internal cross border impact.
 - On long-term arrangements: consider demand-aggregating mechanisms (Caspian Development Corporation, single buyer; but also consider response producers) and be smart on internal market competition versus external monopolies or cartels.
- **8-5 Seek global energy dialogues.**
 - With the Atlantic Basin, and in particular with the US, Canada and Brazil.
 - Enhance the existing EU-OPEC dialogue, focusing on technical issues and deepening understanding of global oil market developments.
 - With Asia, focus on China, India, Japan and Korea, enhancing further global energy cooperation.

The program's partners

Clingendael International Energy Programme (CIEP) is an independent policy think-tank on international energy policy developments and is well positioned to discuss energy issues in the geopolitical and wider political context. www.clingendael.nl/ciep

The Loyola de Palacio Programme of the Robert Schuman Center for Advanced Studies at the European University Institute is the newly created programme in the honour of Loyola de Palacio who, as Commissioner, played such a crucial role in the field of energy policy. The LdP will promote much needed research in this area, mustering academic knowledge and analytical skills in all the social sciences so well represented at the EUI. Its objectives are to produce analytical studies; to promote informed discussion of key issues; to provide state-of-the-art training for practitioners. www.florence-school.eu/portal/page/portal/LDP_HOME

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