

Vattenfall AB
Identification number in the EC register:
12955024114-93
Vattenfall European Affairs
Rue de la Loi, 223
1040 Brussels

European Commission
Directorate-General Climate Action
Unit A.4 – Strategy and Economic
Assessment
Avenue de Beaulieu, 24
B-1049 Bruxelles
Belgium

European Commission
Directorate General Energy
Unit A1 – Energy Policy
Rue De Mot 24
B-1049 Bruxelles
Belgium

E-mail : CLIMA-ENERGY-GREEN-PAPER-2030@ec.europa.eu

1st July 2013

Vattenfall Consultation Reply to the European Commission Green Paper: “A 2030 Framework for Climate and Energy Policies”

Vattenfall is one of Europe's largest generators of electricity and heat. Vattenfall offers a variety of electricity, heat and gas services to private households as well as public and private industry. In electricity and heat, Vattenfall works in all parts of the value chain: generation, distribution and sales. In gas, Vattenfall is active in sales. Vattenfall also conducts energy trading and lignite mining. The Group has approximately 33,000 employees.

Vattenfall is 100%-owned by the Swedish state. Operations are conducted in the Nordic countries, Germany, the Netherlands, France and the UK.

Vattenfall position on an Energy & Climate Framework for 2030

Vattenfall would like to emphasize the following key considerations for a 2030 framework:

- **A truly European approach based on market mechanisms would be the most cost effective way for society to reach the European energy policy objectives.** The core should be European harmonisation of policies combined with a well-functioning and integrated wholesale market. Thus true competition is fostered, the customer empowered and a cost-effective transition of the energy system facilitated.
- Full visibility on the long-term ambitions of the EU climate policy (incl. EU ETS) is essential for boosting confidence for investors. **A firm headline climate target for 2030** and consequently for 2040 in line with the 2050 decarbonisation objective should be adopted.
- **The EU ETS needs to be restructured** to become the main instrument for the transition. Measures as a **revision of the linear reduction factor** in line with a 2030 target and a **permanent set-aside should be implemented**.
- A more long-term development of the EU ETS is needed to make it fit to take on larger changes in economy. A predefined and transparent **supply-side management mechanism should be considered**.
- Vattenfall believe that **the wholesale market price coupled with a strong CO2-price signal should be the main driver for deployment of all mature technologies**, including renewables. In this context, **new European or national renewables targets for 2030 would not be needed**.
- In case growth of certain technologies, such as renewables, is aspired faster and/or further than the level the EU ETS cost effectively can deliver, measures should be aligned with the EU ETS, keeping it in the center and not eroding it. It merits to be further investigated how such solutions linked to the EU ETS could be designed. Any such solutions must be based on thorough analysis, showing in a transparent way the costs and benefits for society and impact on the climate target / EU ETS.
- Coupled with other low carbon generation technologies and demand side solutions, renewables will be an important part of the future energy system. **A post 2020 renewables framework needs to be European and should focus on integrating renewables to the energy system and markets**.
- We believe **it is crucial to create a sufficiently strong European transmission and distribution grid** to continue market integration of renewables. A strong grid enables cost-efficient sharing of balancing and reserve resources, thus promoting security of supply. Market design aspects (e.g. well-functioning intraday and balancing markets) should be further developed to facilitate introduction of renewable electricity.
- The EU ETS and the electricity market should be complemented with **innovation and R&D financing and policies**. Thereby, technologies needed for the long term transition, which are not market competitive today, will be supported.
- A 2030 climate and energy framework is indispensable to enable the sector to invest and to realize the necessary solutions to achieve the climate and energy objectives set out by the EU and its' member states. Therefore Vattenfall call upon the EU to **reach agreements as soon as possible, in view of international negotiations latest by 2015**.

1. General

1.1. Which lessons from the 2020 framework and the present state of the EU energy system are the most important when designing policies for 2030?

The 2020 framework clearly has had several benefits. It has applied an European approach to tackling climate change that has been distributed down to installation level. The climate change issue has also made its way to top management in European companies. The deployment of renewable energy sources has got a boost. There has also been progress made towards an internal energy market such as market coupling, integration and realization of infrastructure.

Extensive modeling and forecasting was presented to support the 2020 framework and all targets were predicted to be well balanced. Demand was expected to grow and extensive new investments were anticipated. The renewables target has been designed to change the supply mix. It would fill the demand for new capacity and replace some of the old. Still, there was room for additional investments in other low carbon technologies as well as energy efficiency measures. Prices of CO₂ and costs for renewables support were projected to be well-balanced and investments in grids were planned to come timely in line with capacity growth. The policy approach was perceived as well balanced, seemingly addressing all future needs.

Then the recession hit Europe. An expected solid electricity demand growth turned into a situation with a steep dip in demand, to be followed by only slow recovery. This has caused a situation with over supply of capacity in many countries. Moreover, the shale gas revolution in the US has turned gas and coal price in Europe in a direction we did not predict only a few years ago. On top of that we have seen the Fukushima accident which triggered a step-wise phase-out of nuclear power and consequently the Energiewende in Germany. These all are events that were not forecasted when formulating the 2020 framework and the overall 20-20-20 approach has proven not to stand the test of adjusting to the new conditions.

The EU ETS did adapt to the new situation with overall low demand in the economy and by that decreased emissions. Prices went down, just as expected, the ETS worked as intended. Though, the renewables target still generated new investments and capacity to the market via subsidies. This has added new intermittent capacity to an already oversupplied market. High shares of variable renewable electricity generation have put new challenges to the energy system. It needs to be more flexible and substantially more integrated, to allow generation and consumption variations in time and geography. Developments of transmission and distribution infrastructure are much needed but have not materialized as planned. In the end this has made running hours of existing, in some cases brand new and efficient plants lower and less predictable. As a response, capacity payments are being introduced in many markets in order to secure delivery of electricity. The renewables policies with its underlying support schemes have had indirect negative price effect on CO₂ emissions because fossils are driven out of the merit curve, which leads – on top of the economic downturn – to a surplus of certificates. Looking strictly on the EU emissions cap, this effect is neither needed to reach the 20% reduction target nor leads it to a faster or higher decrease of the overall EU emissions. The energy efficiency directive was the last piece of the 20-20-20 package to be implemented, and did push the prices in the EU ETS down even further. With very low prices in the EU ETS the system has been perceived as weak and not fit to the challenge of incentivising new investments. Some member states have implemented national policies as a result, for example the carbon price floor in the UK, further eroding CO₂-prices in the EU ETS.

These factors have led to a situation in which the market is out of play and all investments today are driven by subsidies (e.g. RES-support, Capacity Mechanisms, Low-tech support new nuclear, etc.). We've ended up in a flurry of European and national policies which creates investor uncertainty and thereby drives up the costs.

For us the learning from the 2020 package is that you cannot predict the future and that a new 2030 climate and energy policy framework needs to be more flexible and be able to take on changing economic conditions, technology breakthroughs, or any other condition we cannot foresee today. We cannot afford

taking the risks of moving along one certain path, but we need to keep all doors open, and thus, avoid technology and policy lock-in.

We are at a crossroads. Europe must decide on what road to go. Half-way measures don't work anymore. Vattenfall would like to see a continued move along the European and market oriented way.

2. Targets

2.1 Have there been inconsistencies in the current 2020 targets and if so how can the coherence of potential 2030 targets be better ensured?

2.2 Which targets for 2030 would be most effective in driving the objectives of climate and energy policy? At what level should they apply (EU, Member States, or sectoral), and to what extent should they be legally binding?

Due to their interrelation these questions are answered together:

We have experienced a not desirable development of overlapping measures, diminishing the effectiveness of each other.

It must be made very clear what a new European framework should and can address. An overarching problem in the 2020 framework has been that only one of the overall objectives (decarbonisation) has been clearly defined, whereas the two other (security of supply and competitiveness) are interpreted to different purposes. Taking the triple 20-20-20 target approach with climate, renewables and energy efficiency targets to address all of the three overall objectives at the same time without being specific on what objective each single target is supposed to deliver, has caused in-transparency, inconsistency and overlaps between the targets.

We promote a headline climate target for 2030 and consequently 2040 in line with the 2050 decarbonisation objective. We believe that a strong CO₂-price signal coupled with the wholesale market price should be the main driver for deployment of all mature technologies, including renewables. In this context, new European or national renewables targets for 2030 would not be needed. In case growth of certain technologies, such as renewables, is aspired faster and/or further than the level the EU ETS cost effectively can deliver, measures should be aligned with the EU ETS, keeping it in the center and not eroding it. It merits to be further investigated how such solutions linked to the EU ETS could be designed. Any such solutions must be based on thorough analysis, showing in a transparent way costs and benefits for society and the impact on the climate target / EU ETS.

Energy efficiency will remain to be of importance also beyond 2020. Improvements in this area can from our perspective best be reached by setting the right framework conditions and using market signals. No additional target for energy efficiency would then be needed.

Addressing European targets with measures on a European level could also provide greater effectiveness. As seen with the flurry of national renewables policies, more coordination and guidance is needed, when meeting EU targets by national means. The EU should strive for finding European solutions, not only defining targets which the member states implement very differently.

Targets and the underlying instruments therefore should be better harmonized with one another leading to a more simplistic, yet ambitious, policy package.

2.3 Are targets for sub-sectors such as transport, agriculture, industry appropriate and, if so, which ones? For example, is a renewables target necessary for transport, given the targets for CO2 reductions for passenger cars and light commercial vehicles?

It is important that a new climate and energy framework addresses all sectors of the economy. The ambition should be to have an even distribution of burden between sectors to make the transition as cost effective as possible. Instead of introducing several targets for sub-sectors the ambition should be to include more sectors in the EU ETS thereby creating a level playing field.

The transport sector is the key to reach full decarbonization as well as to reduce our oil dependency and thus key for security of supply. The electricity sector is a step ahead of the transport sector in decarbonization, and electricity should be viewed as a vehicle for decarbonization of other sectors.

2.4 How can targets reflect better the economic viability and the changing degree of maturity of technologies in the 2030 framework?

To achieve a cost effective long-term solution for decarbonization, the utilization of mature technologies and new immature technologies to reach the market is needed. The EU-Commission, as well as Eurelectric, both have shown in their roadmaps (Energy Roadmap 2050 and Power Choices reloaded) that excluding any key technology option will dramatically increase costs to society. Striving for market based and technology neutral approaches would lead to a better reflection on the maturity and development of single technologies, thereby avoiding society to overpay for the transition of the energy system.

Vattenfall call for a headline climate target to be introduced for 2030 and 2040 that from mid- to long-term will foster a technology neutral and market based decarbonization while at the same time contributing to security of supply and competitiveness. This target should be coupled with a strong innovation and R&D policy aiming at supporting immature technologies to reach the market.

A clear definition for maturity and immaturity would be a valuable basis for phasing out of subsidies for mature technologies after 2020 and for forming relevant policies and financial support for those technologies that are not yet competitive in the market. Hence, we welcome the Commissions interest in this question and would like to encourage the Commission to present criteria for what should be viewed as mature and immature technologies. We are willing to contribute with our experience in this process.

2.5 How should progress be assessed for other aspects of EU energy policy, such as security of supply, which may not be captured by the headline targets?

Security of supply is one of the fundamental objectives of the EU energy policy. But there is no commonly accepted definition of security of supply and of what level is desired and acceptable. Still, security of supply is used as an argument for implementing targets and policies both on European and national level.

We would like to see that the Commission comes up with a measurable definition of desired security of supply. Such a definition should take into account the difference between security of supply in terms of

- less dependence on fossil fuels imports,
- electricity generation adequacy and
- system stability.

Such definition(s) would be valuable for assessing the potential need for measures besides a firm climate target and an integrated wholesale market. The announced impact assessment in relation to the consultation on the 2030 framework should evaluate what levels of Security of Supply (according to Commission's definition) a firm climate target and an integrated, well-functioning wholesale market will achieve. In this connection it should also be shown which *extra* efforts might be needed by applying other measures and in which sectors they are necessary. Such an analysis should include transparent

presentation of costs, benefits and the interaction with the climate policy/EU ETS. This could be an important basis for the discussion about phasing out of support for mature technologies after 2020 and the potential need for renewables support for immature technologies as well as for any introduction of capacity mechanisms.

3. Instruments

3.1 Are changes necessary to other policy instruments and how they interact with one another, including between the EU and national levels?

3.2 How should specific measures at the EU and national level best be defined to optimise cost-efficiency of meeting climate and energy objectives?

3.5 How can EU research and innovation policies best support the achievement of the 2030 framework?

Due to their interrelation these questions are answered together:

The realization of the 20-20-20 package led to a flurry of national energy policies and instruments and we have experienced a not desirable development of overlapping measures, diminishing the effectiveness of each other. (See also questions 1.1., 2.1.) The whole climate and energy challenge needs to be developed in a coherent process, to avoid sub-optimization, overregulation and contradicting signals to investors.

A market design addressing the challenges associated with an increasing intermittent power generation and establishing a level playing field where all generation and demand resources compete on equal footing is imperative for a 2030 framework. In our view, market arrangements supporting decentralisation of responsibilities, such as well functioning intraday and balancing markets, should be promoted. All generation resources should compete on equal terms, be dispatched based on the price signal and responsible for imbalances. As a cornerstone for the wholesale market design the European Target Model should be implemented without delay.

Vattenfall believe that the EU ETS should be the centre-pillar within EU climate policy. To establish the ETS as a core instrument to mitigate climate change a combination of both short-term and long-term measures is required. Firstly, a swift decision on backloading is needed to address the immediate surplus situation and give an early signal to the market. Secondly, this temporary (political fast-track) solution must be followed-up by a permanent measure to also ensure a sustained effect. Part of the structural reform should be an early revision of the annual linear reduction factor connected to the adoption of an intermediary climate target for 2030 as well as for 2040 guided by the EU's long-term 2050 climate objective. Vattenfall also support the retirement of a number of allowances already accumulated in the market through a distinct one-off measure in form of a permanent set-aside with a significant impact in Phase III. We believe that the EU ETS could benefit from having a legally pre-defined mechanism which allows for an automated moderation in the supply of allowances to account for development in the economy. Such a feature should be volume-oriented (i.e. targeting the supply) since price-oriented features might reduce the EU ETS credibility as a market instrument. In general, a more long-term development of the ETS is needed to make it fit to take on larger changes to the economy

Vattenfall consider the wholesale market price coupled with a strong CO₂-prices signal to be the main driver for deployment of all mature technologies, including renewables. Taking the measures described above, the EU ETS would be able to create a uniform price on CO₂ emissions and ensures that the overall emissions are capped on a level consistent with the adopted climate targets. Thereby it helps to deploy a wide range of cost-effective technologies and response measures. A phase-out of renewable energy support systems after 2020 should therefore be strived for. The EU ETS and the electricity market should

be complemented with innovation and R&D financing and policies to support technologies needed for the long term transition, which are not market competitive today. These should also address the so called “death valley” problem – technologies being on the jump to deployment but still in R&D shoes not finding the necessary investors. Innovations at that stage are marked with high market risks and costs. European promotion of combined public and private funding and initiatives, could create the necessary funding by at the same time sharing the risks. As a technology matures, financing should be gradually adapted to market principles, especially when transferring from the demonstration to the deployment phase.

In case, growth of certain technologies, such as renewables, is aspired faster and/or further than the level the EU ETS cost effectively can deliver, measures should be aligned with the EU ETS, keeping it in the center and not eroding it. It merits to be further investigated how such solutions linked to the ETS could be designed to deliver on the respective ambitions. Any such solutions must be based on thorough analysis, showing in a transparent way the costs and benefits for society and impact on the climate target / EU ETS.

Moving towards a greater utilization of the EU ETS will reduce the societal costs associated with reaching the climate target. Vattenfall strongly recommend linking the EU ETS towards similar trading schemes in other regions of the world. This is important not only for improving the cost-efficiency of the policy and the liquidity in the market, but it is also a crucial move to level out the international competition.

3.3 How can fragmentation of the internal energy market best be avoided particularly in relation to the need to encourage and mobilise investment?

From our point of view, the network codes, established in electricity market regulation, will provide common rules to further develop the internal market and in the end provide a secure and cost-effective electricity supply for European citizens, effectively countering tendencies for more nationally based policies. Vattenfall wish to highlight the importance of maintaining a holistic perspective, taking into account both the Target Model as well as the Network Codes and how well it meets the overall objectives of the common market.

In order to guarantee the development of a common system that provides customers with the best deal, Vattenfall wish to highlight the following priorities for the further development of the internal market:

- Develop and implement system operation network codes for the safe operation of the electrical system and secure supply for European citizens.
- Develop and implement common rules for trade with system services that facilitate the safe operation of the electrical system (e.g. Network Code on Electricity Balancing).
- Develop and implement common rules for the efficient use of transmission capacity (Network Codes on Capacity Allocation and Congestion Management).
- Develop and implement common rules for connection of generators and loads. (Network Codes on Requirements for Generators and Demand Connection Code)

It can currently be observed that single member states consider the introduction of capacity mechanisms, which in general bears the risk of market fragmentation. If a capacity mechanism is introduced it is therefore of utmost importance that it does not interfere with price formation. The capacity mechanism should only be used to “keep the lights on” i.e. help supply meet demands in operational hours. It must be transparent, predictable and contribute to a well-functioning electricity market where each player is responsible for his commitments. It should be reversible and encourage demand response. A capacity mechanism should not deter profitability by crowding out generation and demand adjustments excluded from the mechanism as this would erode system security in the long run.

A strategic reserve used as a measure of last resort is one solution that does not destroy price formation and therefore is favorable. In any case implementation of capacity mechanisms should be based on a

thorough analysis of the underlying factors for the lack of capacity and the likely development of these factors. The design should ensure that the internal energy market is not disturbed.

Another important step to preserving and strengthening the internal energy market is taking European approaches wherever possible. The current flurry of national renewable energy policies is a prime example for the importance of European approaches in order to ensure transparency in energy policies. Various different national support schemes make it harder for foreign investors to assess market situations and national policy developments, which hampers investments.

3.4 Which measures could be envisaged to make further energy savings most cost effectively?

For further energy savings it is crucial to continue the empowerment of customers in order to build acceptance for the emerging new energy landscape and to stepwise increase end user engagement and knowledge to take conscious decisions. We believe it's important to secure that the energy market model can support the end users with full insight to be able to response on price-, CO₂- and volume signals.

Vattenfall support continued EU policies in harmonizing the direction of providing customers sufficient information on energy usage. Implementations should take a cost/benefit analysis on Member State level into account. In order to deliver effectively but also efficiently to energy savings, the roles of suppliers and buyers on the energy market need to be clear. We strongly recommend avoiding regulations that make the utility sector responsible for decisions on the side of the customer. In our opinion energy utilities should be seen as independent energy efficiency advisors when it comes to offering services and products to energy consumers.

4. Competitiveness and security of supply

4.1 Which elements of the framework for climate and energy policies could be strengthened to better promote job creation, growth and competitiveness?

4.2. What evidence is there for carbon leakage under the current framework and can this be quantified? How could this problem be addressed in the 2030 framework?

4.5 How to increase regulatory certainty for business while building in flexibility to adapt to changing circumstances (e.g. progress in international climate negotiations and changes in energy markets)?

The questions 4.1./4.2./4.5. are answered together:

Keeping industry in Europe is crucial. The 2030 framework should strive for solutions that stimulate competition, market integration and European solutions. This will stimulate a cost-effective transition towards decarbonization of the society.

A predictable and reliable policy framework, not being subject to frequent change, would boost investor confidence in the business located in Europe. Not the single elements in themselves but more the overall coherent and cost-efficient approach to energy and climate policies will send the right signals to industry and the energy sector to keep Europe as a core market for business and industry.

4.3 What are the specific drivers in observed trends in energy costs and to what extent can the EU influence them?

Observed drivers for energy costs, next to wholesale prices, usually are: duties and taxes, network tariffs as well as end customer competition or even political influence. Their single impact on energy costs

largely depends on the national design of these instruments. The Commission's announced report on the drivers for energy costs and prices should reflect on the overall costs of society and create transparency on the cost components of climate and energy policies.

The EU is encouraged to give guidance on the implementation of European energy and climate policies and design of instruments to be used. Hence, Vattenfall welcome the announced Communication addressing capacity mechanisms, renewable support scheme design and overall state intervention.

4.4 How should uncertainty about efforts and the level of commitments that other developed countries and economically important developing nations will make in the on-going international negotiations be taken into account?

Climate change is a global issue of high importance for today's society but of course even more for the generations to come. It is vital, however, that other regions outside Europe follow suite and in order to safeguard our competitiveness, cost-efficient approaches should be a crucial part of climate and energy policies.

4.6 How can the EU increase the innovation capacity of manufacturing industry? Is there a role for the revenues from the auctioning of allowances?

We do not address this issue.

4.7 How can the EU best exploit the development of indigenous conventional and unconventional energy sources within the EU to contribute to reduced energy prices and import dependency?

We do not address this issue.

4.8 How can the EU best improve security of energy supply internally by ensuring the full and effective functioning of the internal energy market (e.g. through the development of necessary interconnections), and externally by diversifying energy supply routes?

Lack of transmission capacity is currently the main obstacle for the internal market. Full support for transmission expansion with a European perspective should be the first priority. Development of transmission capacity must be guided by socioeconomic gains from a European perspective and complemented with improved efficiency in allocation of capacities for trade, thus:

Firstly, effective management of existing transmission capacity is a cost effective way of ensuring and in many cases increasing the amount of transmission capacity that is available for the benefit of European consumers. Significant socioeconomic gains can be achieved by a strong European implementation of the network codes, including clear requirements for system operators to make a market based valuation of how capacity is allocated to the market.

Secondly, identification and prioritization must be based on an objective evaluation of European socioeconomic benefits of additional transmission capacity. Hence, it is of utmost importance that the projects of common interest (PCI) following the new Regulation on guidelines for trans-European energy infrastructure, as well as for the Ten Year Network Development Plan (TYND) are selected based on their European rather than national merits.

In relation to the new regulation Vattenfall also wish to emphasise that there is an equal need for bottom-up investment incentives focusing on the overall European transmission development, encouraging transmission owners to develop their grids from a European perspective. That is an important task for member states and national regulatory authorities.

Thirdly, Vattenfall is missing a European-wide acceptance and recognition of the potential socioeconomic contribution from 3rd party projects (merchant links) as a complement to traditionally TSO regulated projects, a driving force identifying and realising interconnector capacity where socioeconomic potential is unexploited. Vattenfall's view is that as long as use of interconnector capacity is subject to market valuation and with full third party access, the difference between TSO and non-TSO projects is primarily solutions on financing, as the principal socioeconomic merits are to a large extent identical.

5. Capacity and distributional aspects

5.1 How should the new framework ensure an equitable distribution of effort among Member States? What concrete steps can be taken to reflect their different abilities to implement climate and energy measures?

5.2 What mechanisms can be envisaged to promote cooperation and a fair effort sharing between Member States whilst seeking the most cost-effective delivery of new climate and energy objectives?

5.3 Are new financing instruments or arrangements required to support the new 2030 framework?

We do not address these issues.