

## **The Stockholm region opinion regarding a new Renewable Energy Directive for the period after 2020 (REDII)**

Behind this opinion stands the Stockholm Region Association for European Affairs (SEF)<sup>1</sup>, which represents one of Europe's most competitive and sustainable regions. The Stockholm region accounts for about 45% of GDP in Sweden and has a population of over 3.6 million people, representing nearly 38% of the entire population of Sweden.

The Stockholm region welcomes the consultation of the EU Commission<sup>2</sup> and the opportunity now given to communicate views and experiences in front of the preparation of a new Renewable Energy Directive for the period after 2020.

The answers of the Stockholm region below are structured according to the headings of the Commission's consultation, where a selection of the questions has been answered.

### **Horizontal questions**

#### **To what extent has the RED been successful in supporting the achievement of the EU energy and climate targets?**

It has been successful, particularly in terms of requirements for national action plans, laying the foundations for a systematic effort to increase the share of renewable energy in the Member States.

#### **Which kind of additional EU measures would be most important to ensure that the EU and its Member States reach the common binding EU target of at least 27% renewable energy by 2030?**

The most important additional measures are the introduction of a carbon tax in all Member States, to encourage a higher share of renewable fuels, including as a complement to the activities covered by the ETS. Other issues of importance to Stockholm region are continued tax exemptions for biogas used as a fuel, or finding new solutions focussing on biogas as a renewable source.

### **Empowering consumers**

#### **What are the barriers for consumers to produce and consume their own renewable energy?**

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<sup>1</sup> The City of Stockholm, the Stockholm County Association of Local Authorities and the Stockholm County Council, as well as other members, Uppsala Regional Council, Sörmland Regional Council, Västmanland Association of Local Authorities and County Council, the Council for the Stockholm-Mälars Region and Gotland Region.

<sup>2</sup> The Commission's consultation: <https://ec.europa.eu/energy/en/consultations/preparation-new-renewable-energy-directive-period-after-2020>

For consumers with low electricity consumption (up to 30,000 kWh/year and 100 Ampere), there is a functional photovoltaic system. As a producer, you supply electricity on the concessionary grid and regain the same amount of electricity, without having to pay energy tax and VAT. But, because of the VAT Directive and the State aid Directive, the limitation of tax reduction is set to SEK 18,000 per year, location and person or business. This limitation allows for electricity production of up to 30,000 kWh/year. Due to the limitation, e.g. smaller businesses (both housing companies and other activities) do not benefit from the tax reduction, and thus the self-production of electricity becomes an economic gamble. Furthermore, the administration is complicated for micro producers, since they, because of the VAT rules, must be registered as companies to get compensation. The compensation a micro producer gets for the electricity supplied to the grid also varies significantly. During the day, between SEK 0.04 to SEK 2 per kWh. This makes it difficult to economically calculate the pay-off time for the plant, when the price situation is so diverse.

**What barriers are particularly hampering the further deployment of renewable energy projects at the local level?**

- Due to the State aid Directive, there is a limit to how much electricity a single owner (or company) can produce, without having to pay energy taxes and VAT. This limitation of 255 kW per owner, applies to the total electricity production of the owner, which means that companies or housing associations with several properties, where electrical panels can be installed are affected. Furthermore, the limitation is designed so that, if the owner has a plant that exceeds 255 kW, energy tax and VAT will be charged on all electricity produced, even if the electricity is entirely used by the producer himself. Due to the equivalent limitation of 50 kW for electricity production from wind generators, companies or municipalities producing electricity exclusively for their own use are still charged energy tax and VAT. This has completely removed the incentive for these actors to engage in new wind power investments.
- The Swedish legislation on the taxation of renewable energy puts a spoke in the wheel of consumers, such as municipalities. The taxation makes it difficult to get public sector funding for the installation of solar power.
- It also remains difficult to get funding for energy initiatives in general. Oil is too cheap today, resulting in small incentives for renewable energy.
- More knowledge about the impact of the emissions on public health at the individual level can also be a key to motivating investments in renewable energy.

**Are stronger EU rules in some areas required to reduce the barriers for the deployment of renewable energy projects at the local level?**

Voluntary agreements and pressure through e.g. the Covenant of Mayors and the Pact of Islands, as well as requirements in EU programs, are great ways of supporting and facilitating local actors/authorities in the preparation of strategies and plans for renewable energy.

**Has the RED been effective in exploiting the renewable energy potential at the local level?**

Voluntary agreements and pressure through e.g. the Covenant of Mayors and the Pact of Islands, as well as requirements in EU programs, are great ways of supporting and facilitating local actors/authorities in the preparation of strategies and plans for renewable energy. Regarding

cooperation between relevant actors at local and municipal level, the Structural Funds are a good way of promoting partnerships. Bureaucracy still needs to be reduced in the management of funds and programs, and regulations still need to be simplified.

Furthermore, support for research into energy efficiency, and the right to self-production of renewable electricity, but also pricing and taxation, are essential to achieving the greatest possible climate impact at the lowest possible price.

Methods for net metering or support to projects developing new models for reasonable price levels are important. Consideration should be given both to the consumers and to the local actors providing the electricity, but also to public actors, who need to build energy efficiently and contribute to as high a percentage of renewable energy in the public sector as possible.

## **Decarbonising the heating and cooling sector**

### **What are the barriers to the deployment of renewable heating and cooling in the EU?**

- Limited deployment of district heating produced in combined heat and power plants (CHP). District heating accounts for only 13% of the heat supply of the Member States. Most of the district heating is produced with imported natural gas, followed by coal and renewable fuels. Apart from the ETS, there is a lack of financial instruments encouraging a higher share of renewable fuels.
- Well-separated food waste is a resource that is not being utilised as fuel for combined heat and power in most Member States. This knowledge is lacking in many Member States.
- Little use is being made of free cooling from e.g. cold seawater. This knowledge is lacking in many Member States.
- Seawater can also be used for heat production using heat pumps. There are examples of how it can be used, but the knowledge and use is limited in many Member States.
- The owners of district heating distribution could receive waste heat from other actors, such as data centres and heat from wastewater systems and larger solar thermal systems, but there is a lack of instruments to make this work. Large amounts of waste heat are generated from the cooling of data centres. Larger data centres and other activities, requiring cold temperatures, should be located close to existing infrastructure for district heating, to enable the recovery of waste heat.
- It is important to have a holistic approach. Today, there is an imbalance between what an individual consumer considers positive at the individual level and what is positive for an entire city. District heating is currently a very effective method of energy supply for cities in Sweden, and research into developing new renewable energy, using district heating systems is important. At the same time, the balance needs to be met, so that consumers wishing to, can use their own renewable energy.

### **What are the best ways of overcoming these barriers?**

- A carbon tax, encouraging an increased use of renewable fuels, should be introduced.
- Instruments should be introduced for a better disposal of separated waste (based on EU waste hierarchy) as a fuel resource.

- Activities generating greater amounts of waste heat should, where possible, be established adjacent to existing or planned infrastructure for district heating supply.
- Incentives for knowledge transfer should be introduced from Member States with efficient systems for waste incineration, combined heat and power and district cooling production, as well as waste heat recovery, to Member States lacking this knowledge.
- It is also important to look at the bigger picture and the system as a whole, rather than focusing too much on the individual property. This may need to be better communicated to the citizens/small consumers.

## **Increasing the use of renewable energy in the transport sector**

### **To what extent has the RED been successful in addressing the EU's transport targets?**

The Directive has been successful in reducing air pollution and dependence on oil. It has thereby contributed toward the decarbonisation targets. However, the use of diesel has increased, which is not as positive in terms of air pollution.

### **Name the most important barriers to the development of renewable fuels and the use of renewable electricity in transport.**

- Lack of long-term tax reduction for biofuels

The Stockholm region sees the need for keeping the tax reduction on biofuels, to maintain the environmental and climate control in the transport sector, and strengthen Swedish climate policy. The tax exemption of biofuels increases the possibility of achieving the target of a fossil-fuel independent transport sector by 2030. Such a tax reduction is also in line with the Lisbon Treaty articles on climate and energy policy, according to which the polluter pays for damage done. An amendment to the EU regulation is necessary; allowing full use of the polluter pays principle, also in the transport sector. The proposals of the Ministry of Finance, through the memorandum Plant Statement for Biofuels 2015-09-14<sup>3</sup>, amendments to the Act on Tax on Energy (1994: 1776) and the Act on Sustainability Criteria for Biofuels and Liquid Biofuels (2010: 598), are unfortunate and will seriously impede the, to date, successful introduction of biofuels, as outlined below.

- The Energy Tax Directive and the State aid rules

The Stockholm region sees a limit to the incentives to invest in renewable fuels, etc. through the State aid rules and the Energy Tax Directive. The Directive provides minimum taxes on different fuels and that renewable fuels should not be subject to tax reductions that make them cheaper than fossil fuels. As a result of the directive, the tax is levied per litre of the replaced fuel. This means that ED95 (an ethanol fuel used in diesel engines, for example, in many of SL's<sup>4</sup> buses and some trucks), which substitutes diesel, will be taxed as much per litre as diesel – even though the energy content of a litre of diesel is equivalent to 1.6 l ED95. A driver using ED95 will thus pay a 60% higher tax per kilometre

<sup>3</sup> Memorandum:

<http://www.regeringen.se/contentassets/56e03541ecee48c7a572c5c0cba909e7/promemoria---anlaggningsbesked-for-biodrivmedel.pdf>

<sup>4</sup> Stockholm Public Transportation, SL, has the overall responsibility for ensuring that everyone living in, or visiting, Stockholm County, will have access to a well-developed, easily accessible and reliable public transport.

driven. The Commission can grant exemptions, but renewable fuels should never be cheaper than their fossil equivalents, because that would be considered unfair state aid.

In practice, this means that it is impossible to use differentiated taxation to provide incentives for renewable fuels. It also means that all innovations allowing for cheaper renewable fuels are punished right away with higher taxes. The incentive for product development disappears completely.

The price comparison is also made retroactively, which means that the tax is based on the ratio of the previous year. In the current situation, biofuels are taxed so that they pricewise are comparable to the petrol/diesel price applicable when the oil price was at USD 110/barrel. They cannot compete with today's petrol/diesel prices, based on oil prices around USD 40-45/barrel. Producers might have saved profits from previous years to accommodate this situation – but this is an effective brake both on new producers and expansion of production.

- Production of biofuels

The main threshold to producing advanced renewable fuels is the price. Since the Member States are prevented, by the Energy Tax Directive and the State aid rules (see below), to provide general tax reductions, and only can provide for short-term exemptions, all the conditions for investment in these are lacking. Instead, the system leads to a situation where, for example, fuel made from used cooking oil, becomes more affordable. Cooking oil is classified as a waste product (even after short use). When cooking oils are classified as a waste product, sustainability requirements are not needed. The system favours a greater use of cooking oil without any sustainability requirements, when sustainability certified organic oils ought to be the main beneficiaries of this policy. Another serious problem is that cereal from surplus farmland cannot be used for ethanol beyond the ceiling of 7%, despite the fact that there are about 40 million hectares of unused farmland in the EU, and that the abandonment of cereal agriculture is the main threat to biodiversity in the EU. Half of the EU's endangered species depend on the small-scale farms that are disappearing in the aftermath of rationalisation.

Not even biogas production from timothy grass is allowed, since timothy grass is used as animal feed. But, if exactly the same area is planted with reed canary grass – with a lower biogas yield – instead, it is, not only allowed, but the biogas counts double, since reed canary grass is a fodder crop. The same backwards logic applies to the oil plant *jatropha*: *jatropha* is normally slightly toxic and the waste from the oil production cannot be used as animal feed. Now however, less toxic and non-toxic *jatropha* varieties are being developed – but then they are considered as feed and African farmers cannot sell them to the EU. What is most profitable for them is therefore to continue growing the toxic *jatropha*.

Similar discussions have now started spreading also to solid fuel, and there are several initiatives advocating that almost all biofuel use should be stopped. This would jeopardise district heating production in the region. In several places in southern Europe, forestry differs significantly from Swedish forestry in terms of sustainability, environmental concerns and safeguarding protected forests. The fact that Swedish forestry is managed in a better way is not very well known among the European environmental movements, which sometimes use a one-size-fits-all approach to European forestry, advocating reduced biofuel use from, for example, the forest.

Electricity is considered by many to be a possible future substitute for fossil fuels. A lot of research is underway in the area, especially around battery capacity, to increase the range. The transition to battery charged vehicles will probably not gain momentum by itself. It is primarily through cooperation and coordination, that Sweden and other Member States can become world leaders in battery charged vehicles. It is the joint responsibility of all parties. The EU is already working on issues relating to standards for charging, etc. and requirements for public procurement and networks of charging infrastructure. For factors influencing the development towards more battery charged vehicles, see the following question.

**What are the most effective means of promoting the consumption of renewable fuels in the EU transport sector and increasing the uptake of electric vehicles?**

To promote the consumption of renewable fuels, the tax issue is the most important (see the argument above). If we get a long-term tax reduction, production, distribution and vehicles will follow. Procurement requirements are another important tool.

Other factors influencing the development towards more electric vehicles:

- Knowledge of electric vehicles – that they already exist, work and are realistic options for municipalities, companies and individuals, in Sweden and the EU. Information and test driving is very important.
- Access to charging stations – at home, the workplace and public places (both normal and fast charging). Drivers of electric vehicles need to be able to charge their cars, to overcome their range anxiety. Drivers of plug-in hybrid vehicles want to drive on electricity as much as possible, and to charge their cars while parked. Businesses, property owners and housing associations, must provide charging stations to tenants and members. There must be charging stations at visitor parkings and other public parkings. Standardisation is imperative so that the same charging equipment can be used by all electric vehicles. Fast charging stations, where the car can be charged quickly, should be established at busy spots.
- The purchase price of the car. A high purchase price frightens people, although an increasing number of car users consider the total operating cost of the car, i.e. low fuel and maintenance costs. Some countries compensate with tax incentives, state premiums, benefits, in terms of free parking and the like, to promote green cars.
- Signals from society. Municipalities and companies that engage in a fossil-free vehicle fleet and purchase electric vehicles set a good example. Additionally, they can, through procurement requirements, require that their suppliers also use electric vehicles for transports and missions on behalf of the organisation. Public procurements, regulations (for example requirements for charging facilities in garages and pollution-free green zones) and taxes (for example, vehicle and congestion tax) also provide important signals.
- The development and performance of electric vehicles. Extended range for both electric vehicles and plug-in hybrid vehicles, and better heating of electric vehicle passenger compartments in winter, are urgent improvement requests put forward by the region's drivers of electric vehicles.

The Stockholm region would, in this regard, also like to point out, that fuel cell vehicles and infrastructure development of hydrogen is an important part of the transition to a fossil fuel-free

transport system. A great deal of development along these lines is already being carried out across Europe, and also the EU has included it on the agenda.

### **Other comments from the Stockholm region**

The fourth paragraph of Article 5.4 states that "...provided that the final energy output significantly exceeds the primary energy input required to drive the heat pump." If the concept of primary energy is used, the calculation must be done in a standardised manner to be specified in the Directive.

Article 16.11. The last sentence should be complemented by hydrothermal energy.

The Stockholm region sees the need for a mandatory reporting of fuel consumption and carbon emissions in mixed driving for heavy vehicles. These data are measured at the vehicle type certification and should be recorded in the vehicle register. Just as for cars and light trucks. Today, heavy vehicles are not certified with regard to greenhouse gas emissions, and it is also impossible to see the climate emissions of heavy vehicles in the vehicle register. The region believes that it is important to push the development of EU regulations to bring about this change. Such work has begun within the EU, in collaboration with the ACEA (European Automobile Manufacturers Association); work that should be supported by Sweden and the Stockholm region, so that it is prioritised and accelerated.

Certification and entry in the vehicle register of the greenhouse gas emissions of heavy vehicles would also be an important tool to encourage more energy efficient heavy vehicles in transportation procurements.

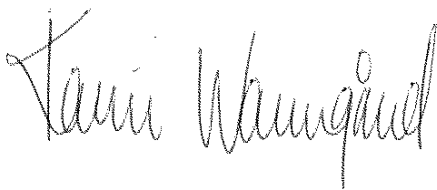
*Finally, the Stockholm region would like to highlight some good examples of work in the region with renewable energy:*

- The energy company in Stockholm has created a business model (Open district heating) for receiving waste heat. All companies and organisations that have surplus heat and are located near the company's district heating or cooling network, can sell energy to the company at market price. The district heating is produced mainly as combined heat and power and supplies about 80% of the heat demand. Today renewable fuels make up about 80% of the fuel mix. A new bio-combined heat and power plant will become operational in early 2016. The share of biofuels will then amount to about 90%. The energy company has decided that by 2030, produce 100% of the district heating with renewable and recycled energy.
- Another interesting example is the cooperation on biogas that Biogas East has conducted, where the collection of food waste and other plant crops is used for the production of biogas, which then is used as fuel for e.g. buses. The targets set up by Västerås have allowed the city to work on the issue, which in turn has contributed to reduced emissions. It is therefore important to set targets and follow them up with activities to achieve the targets. Sustainable solutions must be sought.
- Interesting solutions with heat production from the Baltic Sea can be found in Visby on Gotland. Parts of Campus Gotland and the Almedalen Library, the Congress Hall Wisby Strand

and part of Visby Hospital is heated and cooled using seawater plants. The energy content of the seawater is used for heating and in summer, the seawater is used to cool the buildings. One of seawater plants (a total of 2) is supplied with electricity from solar cells for the operation of the cooling pumps, which makes the operation of the plant in the cooling mode completely renewable.

- The Stockholm region would also like to inform the Commission about Block 6<sup>5</sup>, which is the newest part of the combined heat and power plant in Västerås. The boiler can burn waste and biofuel and works well as a temporary solution to reduce the current waste mountain in Europe.

Stockholm, 10<sup>th</sup> February 2016,



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<sup>5</sup> Information on Block 6: <https://www.malarenergi.se/sv/om-malarenergi/vara-anlaggningar/kraftvarmeverket-vasteras/block-6/>