

POLICY PAPER

EU "THE WORLD NUMBER ONE" ON RENEWABLES:

ANOTHER BROKEN PROMISE FROM PRESIDENT JUNCKER?



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Brussels, 15 June 2015

This Policy Paper is an updated version of my Policy Paper from 12 February 2015 entitled "How to become the "world number one" on renewables" and also largely builds upon my Tribune published in Euractiv on 23 February 2015.¹

One year after Juncker's political declaration before the European Parliament in Strasbourg and four months after the adoption of the energy union, the Commission still does not have a strategy on how to make sure the EU will become "the world number one" on renewables, as promised by president Juncker himself.

The so-called "**progress report**" to be adopted on 16 June by the Commission is simply too little and too late. This report is focusing on 2013 figures to measure the compliance of member states with their indicative national target in view of achieving the 20% objective by 2020, while a whole new impetus is necessary to boost renewables in Europe and worldwide.

While the climate conference (COP 21) will take place in less than six month, **this inertia is a matter of concern**. The latest analysis from the International Energy Agency clearly show that renewables and efficiency are the most cost-effective solutions to maintain global warming below the 2°C limit before the end of the century. At the same time, the G7 leaders gathered in Germany this week agreed to a "zero emission" target, implying a large-scale deployment of renewable energy sources worldwide. At a time all stakeholders are moving forward and re-affirming their commitment to renewables ahead of Paris, why is the Commission so hesitant to send a similar signal?

During the EU Sustainable Energy Week which is to be formally opened tomorrow, we propose that the Commission announces a Communication outlining its strategy on how to become "world number one". This Communication should be adopted as part of the upcoming "Winter Package", before Paris. At this stage, only a pro-nuclear document, the PINC,² is scheduled to be adopted in this package, what would convey the disastrous message that the EU is relying more on nuclear than on renewables to address climate change.

¹ Claude Turmes, [Does Juncker really want the EU to become "the world number one" on renewables?](#), Euractiv, 23 February 2015.

² PINC stands for "Nuclear Illustrative Programmes". It relates to programmes periodically adopted and published by the Commission on the basis of Article 40 Euratom to define the policy on investments in nuclear energy. The last PINC was adopted in 2007 and updated in 2008.

This Communication should acknowledge that renewables are not a problem as often portrayed by the Magritte Group but on the contrary represent a solution for a better energy future at European and global level.

They are present in infinite proportions throughout the world and as such are a unique means to democratise and pacify access to energy. Renewables contribute to restore hope for billions of people living on planet earth and create perspectives for future generations:

- Hope in our capacities to fight climate change and to limit the increase of the temperature to 2°C (even 1.5°C) by the end of the century;
- Hope for the 1.3 billion vulnerable people (almost the equivalent to the population of India)³ who are unable to access electricity despite an endless potential on the earth, e.g. in Africa;
- Hope for economic growth and competitiveness of SMEs and manufacturing industry regarding the potential revenues induced by innovation in the field of renewables, for instance the German Energiewende led to tripling the annual number of RES-related patents;⁴
- Hope for the workforce in light of the immense potential on job creation linked to renewables: in 2012, there were 1.2 million direct and indirect jobs in the renewable energy sector,⁵ a figure likely to increase up to 1.7 million jobs in 2030 in Europe⁶ and 6.9 million jobs worldwide.⁷

Facts about RES - deconstructing the myth

1. RES are not over-subsidised, they received less subsidies than other sources (nuclear & fossil)

If we take the latest study from Ecofys "*Subsidies and costs of EU energy*", it is clear that other energy sources, chiefly nuclear but also fossil fuels, benefitted from way more public support than RES. Hence they are now relying on their vested interests caused by this large historical support. Still in 2015, some governments massively subsidise nuclear, such as the UK State aid to Hinkley Point worth € 20 bn.

2. RES are not expensive: they achieved extraordinary cost reductions

Cost reductions achieved over the last decade are extraordinary. For instance, PV module prices were divided by five in six years (IEA) and a further halving of costs is anticipated. At the same time, other traditional technologies became more and more expensive. This is the case of nuclear (Olkiluoto and Flamanville EPR are estimated between € 8 and 10 bn each) as well as coal plants (real costs of carbon capture and storage cannot be estimated but likely to increase the electricity price by 70 to 80 %).

³ World Bank, [SE4ALL Global Tracking Framework](#).

⁴ Craig Morris, [Renewable energy patents boom in Germany](#), 21 August 2014.

⁵ European Renewable Energies Federation.

⁶ Mario Ragwitz et. al., [Employment and growth effects of sustainable energies in the European Union](#), August 2014.

⁷ Jay Rutowitz, Alison Atherton, [Energy Sector Jobs to 2030: A Global Analysis](#), Greenpeace International, 2009.

If the European Union wants to meet its climate, social, and economic objectives and to become "*the world number one*", we need to deconstruct ungrounded myths related to the costs and competitiveness of renewables and work in parallel on four dimensions:

1. An innovation strategy coupled with a robust industrial policy to maintain or regain our leadership;
2. Support to export opportunities providing solutions for developing countries;
3. A vivid domestic market, condition *sine qua non* for a world leadership;
4. Ease access to capital through a de-risking strategy for renewables projects requiring upfront investment.

1. A strong innovation and industrial policy

The Commission seems to make the right observation when indicating that "*energy dependence should not be turned into technology dependence*". This is absolutely true and **RES technology leadership** is a must. As necessary as they are, will the actions mentioned in this dimension of the energy and climate union (inducement prize, up-skilling of workers, reinforced SET-Plan) be enough? We can doubt about it. In addition, we propose to make the best use of both structural funds and the EFSI. Both the € 38 bn of the structural funds dedicated to sustainable energy and the € 21 bn from the EFSI guarantee should target innovative RES projects. In this respect, article 10 of the EFSI regulation to be adopted later in June by the Parliament and the Council explicitly mentions renewables amongst the investment priorities, aiming to "*supporting an energy- and resource-efficient transition, including as regards infrastructure transition, towards a sustainable, renewable-based circular economy, through the creation of stable and fairly remunerated jobs.*"

Europe still has world industrial leaders in the wind and smart grid sectors, such as Enercon, Acciona, Vestas, Siemens, Alstom, ABB... The wind sector recently reported great trade performance in a context of a fast growing world market: Africa's largest wind farm came on line with the commissioning of the 300 MW Tarfaya plant in Morocco, and South Africa's market made a strong start with 560 MW. Brazil's 2,472 MW in new installations is a breakthrough, while Chile (506 MW) and Uruguay (405 MW) also show strong records.⁸ China still leads the show with 23 GW of new wind capacity installed in 2014... Overall, every 12 days there is new wind capacity added in the world equivalent to an EPR nuclear power plant (1650 MW)! The challenge is to keep this leadership in the **next phase of development of wind energy: off-shore**. In this respect, we need to prioritise energy generation and transmission in the North Sea and in the Baltic Sea through ambitious plans, and to continue technology development of deep off-shore wind mills such as floating platforms. The two years between the Dutch presidency (first semester 2016) and the British Presidency (second semester 2017) should be used to come to **a formal agreement between North sea countries and the Commission** on how to roll-out a 100 GW offshore wind plan, also including marine energies, storage and market interconnection investment. Together with guaranties from the EFSI (Juncker Plan), such a coordinated plan between Commission and member states is the only way to give a long-term perspective for off-shore wind and attract investors such as

⁸ EWEA, [Wind in Power: 2014 European Statistics](#), February 2015 and GWEC, [Global Wind Statistics 2014](#), 10 February 2015.

pension funds, also leading to cost-reductions and standardisation. And this probably represents a good alternative to prevent British energy policy to drift to Texas.

In addition to wind, **photovoltaic must be at the heart of an industrial policy** for renewables. A new investment cycle is expected in the photovoltaic sector to meet the demands of a growing global market. The bulk of the photovoltaic cells and modules are manufactured outside the European Union, mostly in China. The EU thus needs to be fully part of this new investment cycle in order to maintain its leadership on research & development, on machinery, on some other segments like inverters and balance of systems, and to re-install a leadership in equipment production (cells and modules). The overall objective is that by 2020 the EU is in a position to meet at least 20% of its own market with cells and modules manufactured domestically. The European Union should also aim to maintain its expertise on system integration such as small-scale PV solutions for developing countries, as mentioned in a previous [Policy Paper](#).⁹ While experts estimates that the situation "*urgently requires a coherent strategy from European institutions and member states*", such a strategy should be two-folded: "*on one hand support existing players in upgrading their production capacities with an incremental innovation approach, and on the other hand to support the creation of a new major European player aiming at a long-term global growth strategy with a direct jump to innovative ultra-high-efficiency technologies, involving more risks*"¹⁰ While the Commission Joint Research Centre acknowledges that "*the PV industry is transforming into a mass-producing industry with its sights on multi-GW production sites*",¹¹ **European decision-makers should ensure that support to GW projects is made available.** In such a dynamic market place, speed and determination matter. Will the Juncker Commission enter the History books as the Commission which lost the "solar race", while waiving its duty to investigate on the billions of euros of State aid to rescue a dying white elephant called AREVA?

Support the emergence of a GW-scale PV factory: American and European approaches

1. In the US - 750 M\$ for Solar City

The Solar City company bought Silveon and announced its intention to build the world's largest PV factory in the US. As a follow-up, the State of New-York approved in September 2015 a 750 M\$ contribution to the project.

2. In Europe - 0 € for xGWp

A consortium made of Fraunhofer Institute, the company MeyerBurger and the French lab INES is promoting the xGWp project since 2012. The project requires 50 M€ for the pilot phase and 500 M€ for the factory itself, using thin-film heterojunction technology. European public authorities so far failed to commit a single cent to the initiative.

Will the US Solar City or the EU xGWp win the race?

Innovation should also rely on the contribution of **cities**. Initiatives such as Smart Cities and Communities as well as the Covenant of Mayors and its 6,000 parties should be exploited to their full potential. The magnitude of financing of the secretariat of the **Covenant of Mayors** and the technical backup provided by the Joint Research Centre must be adapted to the growing success of one of best European outreach initiative ever designed in the energy sector. The energy transition is not all about technologies, it is also

⁹ Claude Turmes, [Manufacturing PV cells and modules: Europe can do better](#), 3 December 2014.

¹⁰ Gaëtan Masson, Milan Nitzschke, Ruggero Schleicher-Tappeser, *Future of the Photovoltaic Manufacturing Industry in Europe*, 20 March 2015.

¹¹ Arnulf Jäger-Waldau (JRC), [PV Status Report 2014](#), November 2014.

about **social innovation and system integration** and cities are in the best situation to actually trigger this shift. Many bottom-up ideas emerged over the last decade through the **Intelligent Energy Europe** programme. The unnecessary dilution of this programme within the broader Horizon 2020, decided by the Commission against will of Parliament and of the Council is reducing the visibility of this important component of our innovation policy. We can only hope that it does not lead to a reduction of the financing of innovative decentralised projects close to the driving forces of the energy transition: cities, regions and citizens organisations all over Europe.

2. Support to exports and solutions agenda for COP 21

2015 is the year of the Paris conference and the EU should use this opportunity to develop new markets for our RES know-how, both in terms of individual technologies (such as wind turbines) but also in terms of system integration, notably in the urban environment. Making cities smarter throughout the world would ensure **a sizeable market for European companies on green technologies** exists. Not only urban areas are concerned: rural areas are also in desperate needs of electrification and small-scale photovoltaic systems coupled with batteries are part of the solution. This is very much relevant to supply African remote regions with the necessary power.

A good way for the European Union to promote this agenda is to link it with the COP21 discussions at global level ahead of the Paris Conference: as the world's largest contributor to development aid, the EU has full legitimacy to push for this **solutions' agenda in international talks** and to upscale initiatives such as the Sustainable Energy for All (SE4ALL) programme launched in 2011 by UN Secretary-General Ban Ki-moon to *"achieve a broad-based transformation of the world's energy systems and build a more prosperous, healthier, cleaner and safer world"*.¹² This agenda is much more positive than export credits for coal still granted by some member states and currently under review at the OECD level. We welcome also the idea to use the Paris year to promote the idea of a "Covenant of Mayors"-like initiative outside the EU. This would help local actors to get ready for energy transition in countries such as China, Egypt, India, Mexico, South Africa, Ukraine... It would constitute a much more effective way to promote the European values rather than gas diplomacy that breaches our commitment to human rights, such as the newly-established Euro-Mediterranean gas platform.¹³

Solutions agenda for COP 21 Towards a world "Juncker Plan" for renewables

The Global Energy Efficiency and Renewable Energy Fund (GEEREF) established in 2008 under the leadership of the European Parliament, is a "fund-of-funds" investing in private equity funds focusing on RES and EE projects in emerging markets. It has invested in six funds across Africa, Asia, Latin America and the Caribbean as of December 2014.

In 2015, the European parliament also contributed to "green" the Juncker Plan by leaving a greater emphasis on efficiency and renewables.

Building on the successful experience of the GEREFF and on the promising Juncker Plan, we propose that a guarantee fund is developed jointly by the International RES Agency (IRENA) and the EU (possible with the EIB and national promotional banks) in order to leverage capital to finance RES projects worldwide.

¹² <http://www.se4all.org/about-us/>

¹³ <http://ec.europa.eu/energy/en/news/commissioner-launches-euro-mediterranean-gas-platform>

A good showcase for the European industry could be the case of **Vanuatu**. A violent twister inflicted massive human and material losses to this archipelago, critically damaging the whole energy system in a context where only three out of the 83 islands constituting the country are connected to an electricity network. The EU should re-build the whole energy system of Vanuatu, exclusively relying on renewable sources instead of replacing the highly inefficient and costly diesel generators with new ones. The expected impact is to cut the country's greenhouse gas emissions and to drastically reduce the country's huge energy bill caused by fossil fuel imports. This is fully in line with the objectives of the EU in Vanuatu as outlined in the National Indicative Programme 2014-2020, focusing on rural development. Electrification of remote zones is an essential part of rural development, in a country where only some 27% of the population has access to electricity. This initiative would at the same time offer market shares to green European companies and contribute to the solutions agenda to be offered by industrialised country to developing country in order to gain their active involvement in the fight against climate change.

3. A vivid domestic market

Firstly, we are calling for the establishment of a fair market design not penalising renewables compared to other generation technologies. This **includes a real internalisation of all costs for all technologies** (including waste management and dismantling costs linked to the exploitation of nuclear energy, so far representing a significant legacy possible amounting to € 700 billion, more than twice the whole Greek debt) and more transparency in the true costs of power generation, as the Commission itself acknowledged immense historical support to fossil fuel and nuclear industry over the past decades in a study published in November 2014.¹⁴ Carbon costs should also be internalised thanks to a well-gauged and functioning ETS inducing a meaningful carbon price. In line with the G7 commitment to reach a "zero emission" objective, public subsidies to fossil fuels should be phased-out without delay, having in mind the huge health costs related to the exploitation of coal. Support is only justified when it is about developing new technologies which do not show negative externalities, have little environmental impact and no risk, contribute to fight climate change, and can rely on promising learning curves.

The market design communication to be adopted by the Commission under its energy "summer package" should recall that **priority access to the grid and priority dispatch are indispensable** mechanisms to support renewables. It should also propose a solution to the so-called "merit order" effect observed in energy-only markets. During periods when the sun shines and the wind blows, electricity prices are so much below the average (thanks to the low running costs) that renewables power plants cannot properly remunerate themselves. This market design is not fit for renewables and should be adapted to the new reality. State aid guidelines should also be reviewed as they currently impose that "*measures are put in place to ensure that [renewables] generators have no incentive to generate electricity under negative prices*".¹⁵ This is discriminatory against renewables who pay the price of the rigidity of old conventional plants. In addition, a new market design should enable renewable energy power plants to **fully participate to the balancing market** thanks to adjustments such as the possibility for aggregated portfolios of plants to participate alongside single plants, the enlargement of balancing areas, the alignment with the rules of the intra-day market, a decrease in the minimum size of bids...

¹⁴ Ecofys, [Subsidies and costs of EU energy](#), 11 November 2014.

¹⁵ [Guidelines on State aid for environmental protection and energy 2014-2020](#), (2014/C 200/01), 28 June 2014.

Secondly, we need to ensure the **full implementation of the legislation** to meet our 2020 objectives. It goes through putting more pressure on the countries lagging behind such as Belgium, France, Latvia, Luxembourg, Malta, the Netherlands, Slovenia and the United Kingdom. The Spanish case is equally worrying. Although Spain remains above its interim targets thanks to the 2008-2012 boom, retroactive regulatory changes killed the market and led to a situation where nearly 0 MW of renewables were installed in 2014. It is likely that such stagnation continues in 2015 in the absence of political willingness to design a support scheme for renewables.

Thirdly, we need to combat the ongoing **crusade undertaken by the European Commission directorate-general for competition aiming to destroy national support schemes for renewables**. This attempt to ensure "*fully effective cross-border opening*" of national support schemes would undermine small-scale RES development and citizens' involvement as only large companies would be in a position to succeed in fully open auctions and tendering procedures. This is unacceptable as it only serves the interests of big oligopolies. This undemocratic change would kill self-consumption of self-produced energy and also critically undermine investors' confidence. On the contrary, the Commission should **favour a gradual convergence** of national support schemes through regional cooperation and thanks to development of **standard contracts for cooperation agreements** foreseen under the RES directive to reduce red tape.

In the medium-term (2030), the objective is to drive investments by securing a **stable regulatory framework**. Retroactive changes such as the ones implemented in Spain notably are not acceptable. This implies the establishment of **strong governance with national binding targets** in a regional context. Without national binding targets preventing free-riders from passively getting the benefits from ambitious countries, and without an overall target higher than the weak 27% suggested by the Heads of State, there will be no buyer for cost optimised green electricity.

Beyond electricity, we also encourage the Commission to think of a RES strategy for heating and cooling as one third of our energy is consumed in buildings for **heating and cooling** purposes. This is all the more necessary than 60% of the gas imported from Russia is burnt in district heating systems which should switch to biomass. A faster development of RES in the heating and cooling sector couples with investment to modernise district heating networks would subsequently show great geopolitical benefits. We invite the Commission to adopt this strategy for heating and cooling without delay, and in any case before next winter.

According to the IEA, while some 45% of our power supply would be generated by renewables in 2040 under new policies scenario, this share is falling to 17% in the transport sector, far less than in the United States for instance.¹⁶ Thus the Commission's objective on transport (increasing **electric mobility**) is a **good way forward only if in parallel the share of renewables reaches a level well beyond 50% of the electricity mix**. Electric mobility should not represent an objective in itself if not accompanied by a higher penetration rate of RES electricity. It should also be complemented by investments all along the chain and not only on the vehicle fleet: fuels, services, transport management systems, integration of smart technologies. ILUC was rightfully recalibrated recently, but too little incentive has been established to support the development of advanced biofuels. We call for a more systematic mobilisation of the Common Agriculture Policy and the Horizon 2020 funds to go in this direction, as well as a revision of the Fuel Quality Directive for the post-2020 period.

¹⁶ International Energy Agency, World Energy Outlook 2014 (expressed in share of the primary energy demand).

4. A de-risking strategy to ease access to capital

According to the IEA Mid-Term Renewable Energy Market Report 2014, EU investments are foreseen to stagnate or decrease until 2020. This is why we need a more proactive approach. In a context where a broken ETS does not play its role, Commission and member states should make the best use of the upcoming European Fund for Strategic Investments (EFSI) and of the structural funds to **lower the cost of capital** for sectors with high capital costs such as renewables. Investments in renewables show very different patterns from other energy investments as they require a lot of upfront capital and then show very low running costs. Access to capital is key, and this access can be improved by lowering risks as well as risk perception through a European de-risking strategy.

The Spanish case: High capital cost induced by retroactive changes

Retroactive regulatory changes adopted by the conservative Spanish government were not only unfair towards investors already having RES assets in Spain and whose return rate was reduced to zero but it was also a major attack against future RES development in the country as it critically affected investors' confidence and subsequently triggered high interest rates (an estimated 10% WACC for onshore wind, far above the EU average).

Rather than acting as an honest broker, the Commission tries to protect the current government by opening an investigation on the former support scheme: declaring it incompatible with the State aid guidelines would prevent investors from seeking fair compensation for their loss induced by retroactive changes. In this matter, the Commission seems to act a politically affiliated one-sided party under the leadership of commissioner Canete, a former member of the conservative Spanish government...

It is obvious that the conditions to access capital are very diverse across Europe with a **Weighted Average Cost of Capital (WACC)** spread from 3.5 to 13% and a cost of debt spread from 1.8 to 12.5%,¹⁷ reflecting the different level of actual and perceived planning risks, financial risk and political risk, mostly linked to renewables specific risk premium, country specific risk, grid access risk, technical and management risk, market risk... This spread is much more relevant to the investors than the solar spread between various radiation conditions in Europe. For this reason, it is currently much more economically rational to invest in PV in Germany than in Greece. A European **de-risking strategy** should identify each of these risks and aim at addressing them individually in order to restore investor's confidence and ensure renewable project promoters access affordable capital across Europe.

To conclude, we are convinced that slowing down the RES domestic market in order to protect the Magritte Group's fossil and nuclear assets would have negative consequences on our growth, competitiveness and export potential in addition to threatening our climate change objectives. The Commission needs political courage to promote a dynamic domestic market coupled with proactive industrial, innovation and commercial support to open the door to the energy transition and restore the hope of many people throughout the world.

¹⁷ First results of the DiaCore project, not yet published: <http://diacore.eu/outputs>

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