



CENTRE FOR STUDIES ON FEDERALISM

policy paper

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**Global Warming:  
with a view to the 2015  
UN World Conference in Paris**

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The **Policy Paper** series of the Centre for Studies on Federalism includes analyses and policy-oriented research in the field of national and supranational federalism. The papers aim to stimulate scholarly and political debate on topical issues by presenting original data, ideas and proposals.

**Global Warming:  
with a view to the 2015  
UN World Conference in Paris\***

\*This text is a memorandum prepared for the Holy See in view of the UN Climate Change World Conference that will be held in Paris in December 2015.

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A worrying record was set in 2013. According to the UN World Meteorological Organization, in 2013 the levels of greenhouse gases in the atmosphere reached a record high peak.

These are only the latest data, which add to the critical scenario described by the IPCC (Intergovernmental Panel on Climate Change), the UN body on global warming consisting of approximately 2,000 scientists from 160 countries around the world<sup>1</sup>.

In its increasingly alarmed periodic reports, the IPCC continues to warn us that global warming, resulting from mankind's higher and higher consumption of fossil fuels and increased emissions of CO<sub>2</sub> and other greenhouse gases into the atmosphere, is likely to exceed the "threshold of irreversibility" within ten years, (which is marked by the increase in global average temperature by 2°C this century) if determined and rapid action is not taken at global level, and it will put at risk the very survival of the human species.

According to the most recent studies conducted by the IPCC, by 2050, global emissions in the atmosphere must be reduced by 40% to 70% compared to 2010. The results of this reduction have to be obtained in no more than 15 years, and be completed over the next 20 years<sup>2</sup>.

Despite considerable but insufficient progress in reducing harmful emissions, China, the US and Europe account for over 55% of these emissions<sup>3</sup>.

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Therefore, a trend reversal in air pollution depends on these three economic zones to avoid the situation getting out of control.

Through their essential cooperation, other polluting states (in particular Japan, India, Russia, Brazil, Indonesia, South Korea and South Africa) are also likely to be involved. This would allow a binding Agreement (or Convention) among the worst polluters on the planet on gradually reducing CO<sub>2</sub> and other greenhouse gas emissions to be reached during the next international climate conference in Paris in 2015, as well as allowing all the necessary measures to be taken to implement the commitments undertaken.

### 1. The New Energy Paradigm

The energy regime has seriously affected the means of production and life style since the very beginning of human life on the Planet.

More recently, since the mid-19<sup>th</sup> century, the Industrial Revolution has changed the world: all the solar energy stored over the aeons in the form of coal, oil and natural gas has supplied “unlimited” cheap energy to steam and internal combustion engines.

Since then, the pace, speed and flow of economic activities have increased.

The boom in agricultural production, mass production of manufactured goods and the extensive use of natural resources of all kinds have led to an increase in the productivity of human activity and an unprecedented material well-being.

This energy regime (cheap fossil fuel consumption by machines) has contributed to population growth and urbanisation, and, conversely, to environmental destruction resulting from the unlimited consumption of natural resources, especially energy resources, and of their unrestrained depleting.

Now, after more than a century, despite opposition and enforcement actions, including media actions, by fossil fuel-producing states and the large, powerful oil and car manufacturing lobbies, the technology of energy production from solar sources (to which wind source is also linked) has now been developed.

Solar energy is an endless resource: in forty minutes, the sun radiates as much energy onto the Earth as the whole of humanity consumes in a year<sup>4</sup>.

It is not only abundant but completely free, and it spreads from north to south, albeit in varying degrees.

In general most of the “solar-rich” countries are less developed. Many of them are afflicted by the scourge of poverty, hunger and child mortality, while they benefit from solar radiation levels that are higher than those of other currently more economically developed areas, almost as a form of compensation.

The solar energy (and wind energy, resulting from the different thermal fields produced by the sun) generated using different technologies (thermal storage, production through photovoltaic technology or concentrating solar technology) has now overcome the barriers of its cost-effectiveness, competitiveness and reliability and it still offers very wide scope for further and rapid improvement.

According to the most recent studies:

- from 2007 to 2014, the production cost of photovoltaic solar panels has dropped from 3 Euros per electric kW/h to 0.50 Euros<sup>5</sup>;
- the cost of lithium batteries for the storage of the electricity produced has plummeted from 1,100 Euros per kW/h in 2010 to the current price of 350 Euros, and is expected to reach less than 100 Euros over the next 10 years;
- moreover, in the meantime, fuel cell technology for the storage of energy produced by solar/wind sources, which are intermittent, has become reliable, efficient and now economical in many cases.

The fuel cells, through hydrogen production and its reuse in the same cells, allow excess energy to be stored if needed for times when the energy source is not available (at night, in winter, when raining, when there is too little or too much wind);

Companies producing fuel cells, including listed companies, now exist and thrive (Rolls Royce, Teledyne Inc., Hydrogenics etc.), although they

are only focused on niche markets (e.g., backup of computer data);

- solar electricity distribution technology using the interactive power network (intergrid) has advanced and is now widespread;
- high-end electric cars (hybrid and plug-in) are currently competitive, considering not only their initial purchase cost but also their longer life and lower operating costs (e.g., Tesla)<sup>6</sup>. Within a few years their competitiveness is also expected to extend to small and medium size cars which are already being produced and distributed on the market (e.g., Renault, Nissan, BMW, etc.).

Wider use of solar (and wind) energy:

- will dramatically reduce carbon dioxide and other greenhouse gas emissions since there is no pollution from generating electricity in this way and using it in electric motors;
- will greatly free us from our dependence on fossil fuels, especially in “solar-rich” countries which, already underdeveloped (Africa and South East Asia), have all suffered the negative effects of global warming (the drying up of watercourses, desertification, reduction in agricultural crops, typhoons, floods, hurricanes and other natural disasters due to an increase in extreme weather events linked to global warming) without reaping the benefits that are exclusively directed towards today’s developed countries.  
They will be able to benefit from electricity production at almost no cost, thus triggering endogenous development processes in the sectors of traditional agriculture, crafts, the on-site production and use of raw materials and the goods produced.  
One possible indirect effect will be a reduction in migration flows and populations remaining in the countries of origin.
- will contribute to spreading not only wealth and reducing inequalities but also democracy, as all the world’s people will be able to produce the energy they need for themselves and their families almost for free, without having to depend on external producers to purchase fossil fuels.

This will provide all the evidence needed to prove what an inestimable gift the sun is.

This evokes and breathes life into the words of St. Francis of Assisi in his *Canticle of the Creatures*: “Be praised, my Lord, through all your creatures, especially through my lord Brother Sun, who brings the day; and you give light through him. And he is beautiful and radiant in all his splendour! Of you, Most High, he bears the likeness”.

## 2. Make Binding Agreements Among Polluter States Possible

As said earlier, in 2012, China, the United States and the European Union produced 55% of the total global CO<sub>2</sub> emissions in the atmosphere (34.5 billion tons, a 1.1% increase compared to the previous year).

China is responsible for 29%, the US for 16% and the EU for 11% of the total emissions.

Disaggregated data, country by country, show once again that per capita emissions in the US are more than double those of China and the EU, which are equal however<sup>3</sup>.

Consequently, developing countries cannot agree to the US proposals, clearly stated in the 2009 Copenhagen Conference and dictated by the US Congress (and so far maintained), to calculate the progressive reduction in CO<sub>2</sub> emissions in the atmosphere on the basis of the total emissions of each country (rather than on the per capita emissions) because they are obviously contrary to the most elementary principles of fairness and justice.

The longest-industrialised countries are, *inter alia*, the ones that have benefited most from the low-cost consumption of fossil fuels and are responsible for the majority of the CO<sub>2</sub> and other greenhouse gases accumulated in the atmosphere and should bear most of the costs of greening the economy.

However, the principle of cost-sharing on the basis of the total emissions would place the burden of higher costs on the developing countries that have most suffered the adverse effects of pollution, mainly caused by industrialised countries.

Putting forward the US proposal again means that agreement will be impossible, despite the willingness shown by the various parties.

Therefore, the United States needs to address negotiations with other states starting from a reduction in pollutant emissions on the basis of the per capita emissions of each country.

As with all international treaties, the loose Kyoto Protocol, which expires in 2020, lacks the necessary governance, sanction and coercion instruments.

It has, therefore, been largely disregarded. When its targets were achieved in some countries, this was due to that country's ability and interest rather than to its willingness to observe the provisions of the international Treaty (which, in any case, was not ratified by many major polluting states).

Therefore, it is necessary to get beyond concluding a new international Treaty.

In Paris an Agreement must be reached that includes the establishment of a "World Environment Organization" under the auspices of the UN, at a higher level than polluting states and with the power to monitor them.

This Organization should be modelled on the European Coal and Steel Community (ECSC), which, after the war, European states entrusted with rationalising the energy resources of the time and regulating production and consumption in key areas for post-war reconstruction.

The new Organization should be endowed with real powers and financial autonomy and be managed by an independent High Authority with the task of implementing a Global Plan to reduce CO<sub>2</sub> emissions in a balanced manner - agreed upon under the above-mentioned binding Agreement. It should also adapt the objectives to the evolving situation, implement structured actions to combat global environmental emergencies, develop new technologies in the energy sector and transfer them to industrialising countries.

In the future, a global carbon tax should be introduced to discourage the use of fossil fuels, with different rates that vary according to the carbon content of each fuel. This tax would also provide the World Organization with the funds necessary to achieve the purpose for which it will be set up.

It should operate under the democratic control of the UN General Assembly and the future UN Parliamentary Assembly (when it is established), in accordance with the principle of "*no taxation without representation*".

### **3. Conditions for feasibility**

The aforementioned binding Agreement requires the total support of the European Union. However, considering its very advanced position in reducing CO<sub>2</sub> emissions, it is being called upon to play a leading role in the green conversion of the world economy based on solar energy, which best suits its history, aspirations and interests.

The introduction of a European carbon tax in Europe, at least in the Eurozone, aimed at financing a "Special European Fund for Growth and Employment" which should be achieved using the "enhanced cooperation" mechanism provided for in the Lisbon Treaty, falls within the objectives of providing the EU with the financial resources necessary to implement a "European Investment Plan" essential to promote sustainable development in the EU and reduce unemployment. Therefore, it is being advocated by the European Parliament and Commission.

If it were approved in the EU, as hoped, also in the wake of the announcement-effect of its intent, this would provide a clear signal of its willingness and could act as an effective example, strongly encouraging other countries (primarily the United States and China) to emulate it.

Therefore, a European carbon tax is of strategic importance to facilitate its extension to other industrialised countries.

The European Union is the only economic area where the virtuous process of the green conversion of the world economy can be launched.

This worldwide launch requires a starting point that can be clearly identified in a major economic area. The EU can fulfil this role perfectly and trigger an emulation process outside its borders.

A European carbon tax should also play this important role.

Its first target would be consumption, by imposing a European tax to be allocated to the above-mentioned “European Fund”. At a later stage, the rate of this tax could be increased by an additional amount and used to finance the World Organization.

Citizens would then realise that they are simultaneously citizens of their own country, the EU and the world.

The new tax would be welcomed by European states and citizens if the European investments needed to stimulate European economic recovery were financed by the European government. National budgets would no longer bear the burden of these investments and so countries could use these newly available resources to reduce their national taxes, especially on labour and corporate income, with additional benefits to boost demand and economic recovery.

#### 4. Conclusion

An energy regime based on solar/wind energy, which does not release any harmful emissions into the atmosphere and on which the gradual mitigation of global warming depends because it reduces the number of the sources of the emissions, is within reach.

However, this regime will not be able to immediately replace the production systems in place in different countries and will require timescales for its introduction (consider, for example, the case of France where 80% of electricity production derives from nuclear power).

Nonetheless, these timescales could be quickly reduced to the benefit of the environment if the desired binding Agreement on CO<sub>2</sub> emissions reduction and the ensuing establishment of the above described new World Organization were reached at the Paris Climate Summit.

The introduction of a global carbon tax would further accelerate progress towards the decarbonisation of the economy. However, this decision is linked to the EU’s willingness to take the first step by internally introducing a carbon tax, which is necessary to finance investment in development and employment, aimed at stimulating economic recovery and halting the European Union’s rapid decline.

#### References

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- 5 *European Photovoltaic Industry Association* data, News 2014.
- 6 Tesla, Umicore, UBS “Will solar, batteries auto electric cars reshape the electric system?”; Q series UBS, August 2014.

## CENTRE FOR STUDIES ON FEDERALISM

The **Centre for Studies on Federalism (CSF)** was established in November 2000 under the auspices of the Compagnia di San Paolo and the Universities of Turin, Pavia and Milan. It is presently a foundation.

The activities of the CSF are focused on interdisciplinary research, documentation and information on internal and supranational federalism, the developments of regional and continental integration (notably, of the European Union), the issues related to the world order and the democratization process of the international system.

The CSF promotes an annual **Lecture**, named after Altiero Spinelli, on topical European issues. The CSF publishes **Research** and **Policy Paper**, as well as its own "**Federalism**", **The Federalist Debate** (also online), the **Bibliographical Bulletin on Federalism**, the online-journal **Perspectives on Federalism**, the **International Democracy Watch**.

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