



Opportunistic Behaviour and Asymmetric Information Lead to Climate Catastrophe

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ABSTRACT

The climate change theory has not only been more and more confirmed. But it has also been given a more radical formulation. The abrupt climate change theory not only shortens the time of arrival of dismal consequences for living organisms but also strengthens the risks and hazards for mankind considerably. There is no policy response from the UNFCCC or the UNCP, or any other responsible political body like G20. Why? Because we all know the global state coordination will fail in relation to global warming. The COPs are just gaming. The COP21 project is already bypassed by real developments in the Arctic, i.e. meltdown and methane release, with no recognition of feedback loops. Its tempo of the goal of decarbonisation is too slow and open to the flaw of all coordination, namely defection.

KEYWORDS: Abrupt climate change theory, COP21 Treaty, Hawking irreversibility. Coordination failure, social modeling collective action

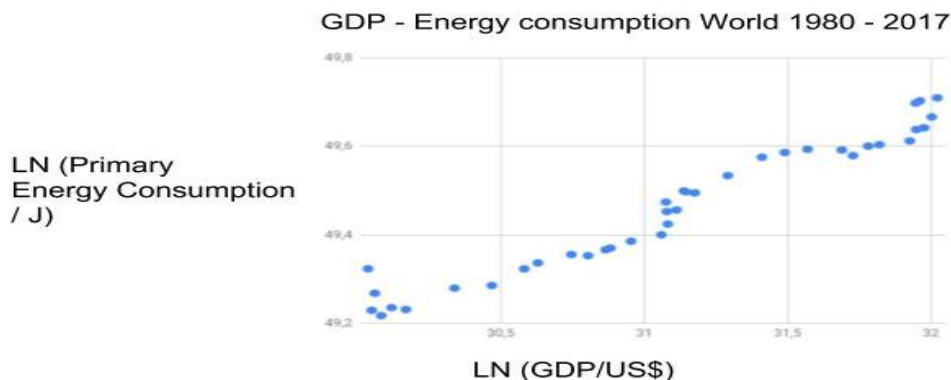
INTRODUCTION

To understand why the natural scientists' prediction of abrupt climate change has no impact upon business as usual in states and markets, one must turn to recent advances in the social sciences, especially game theory with asymmetric information. Before we look at defection, we explain why energy change on a large scale is improbable. The existing situation has tremendous "normative power", declared German political scientist Jellinek.

ENERGY AND ITS IMPLICATIONS FOR MANKIND

The public and private sectors demand lots of energy to produce their goods and services. Energy, or the capacity to do work potentially or actually, is key in economic growth for enterprises and financial institutions in rich countries. And energy is absolutely essential in socio-economic development in poor nations. But energy supply drives the emissions of GHGs, as energy consumption results in GHG emissions as long as fossil fuels dominate supply. Figure 1 shows most recent data about the iron link between GDP, or economic output, and energy consumption, globally.

FIGURE 1. GDP and energy



Note: R2 = 0.951

Sources: BP Statistical Review of World Energy
World Bank Data Indicators

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The prospects for decarbonisation halting climate change seems grim, especially if abrupt climate change theory is correct. The crux of the matter is energy, which still comes with a high carbon intensity in most countries. Energy is the capacity to do work, which is the foundation of affluence.

ENERGY AND HUMAN DEVELOPMENT INDICATORS

The central position of economic growth in rich countries and of socio-economic development in poor countries is much in consonance with basic human drives as well as with the logic of vibrant capitalism in the global market economy. Governments and politicians cherish economic growth, because it makes more policy-making possible. Look at the evidence about the positive effects of energy in the figures below, linking energy consumption with human development indicators.

Energy is the capacity to do work. And work is the Adam Smith and J-B Say sources of human welfare. The growth in energy consumption since the industrial revolution and especially after the Second World War has been just immense, especially the supply of fossil fuels. In poor countries, the demand for energy is huge for economic development toward “catch-up”, whereas rich countries are heavily dependent of fossil fuels for economic growth. The majority of countries in the COP project are in poverty, as

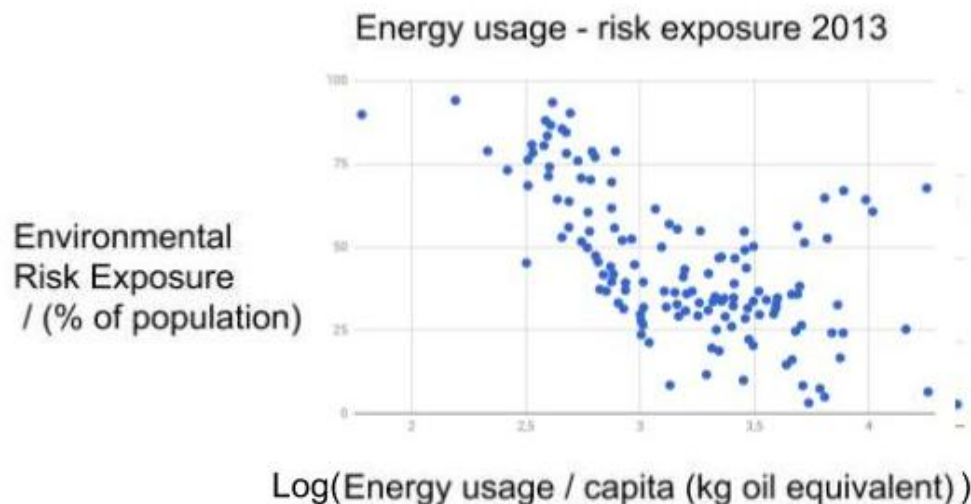
they need more energy. Thus, they can only decarbonise when renewable energy sources become available. This is the redistribution task of COP21: decarbonisation against support for renewable energy by the Super Fund.

The living conditions in the poor countries in Latin America, Africa and Asia as well as the Pacific reflects the low level of energy employed. This basic fact determines life opportunities in a most dramatic fashion. The low access to energy has consequences for the environment and the life situation of people, including health, schooling, work, food and potable water.

For instance, African countries are poor because they have too little energy. Thus, they have much less GHGs than Asia. Yet, they need the COP project of the UNFCCC to renew their energy sources and move from fossil fuels and traditional renewables to solar power. Hydro power depends upon water availability that shrinks with global warming.

African energy deficit is conducive to a dire environment with enormous damages and risks. Consider the following global figures. Figure 2 shows how low energy leads to an unsafe environmental.

FIGURE 2: Energy and environmental risk exposure



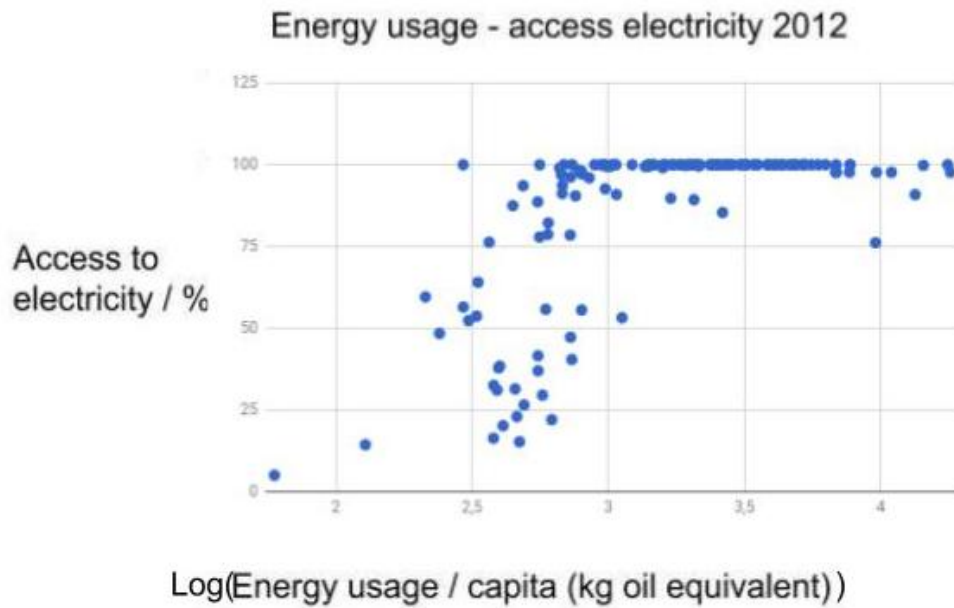
Source: Environmental Performance Index, Yale University, <https://epi.envirocenter.yale>.

IEA Statistics © OECD/IEA 2014 (<http://www.iea.org/stats/inde>)

Low energy use leads to poverty, malnutrition, diseases, lack of potable water, insufficient sanitation, etc. Typical of many Latin American, African and Asian nations is the lack

of stable electricity, which hampers everything and reduces environmental viability. Figure 3 has the global picture.

FIGURE 3. Energy and electricity access

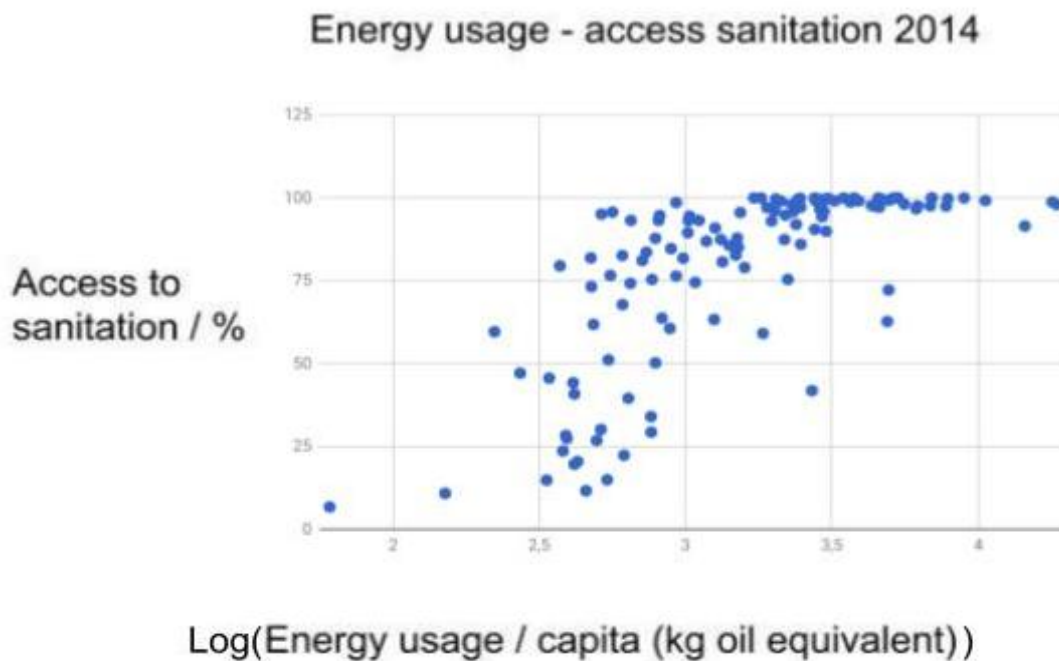


Source: Environmental Performance Index, Yale University, <https://epi.envirocenter.yale>.

IEA Statistics © OECD/IEA 2014 (<http://www.iea.org/stats/inde>)

The access to safe and stable electricity is crucial for health, schools, food, water, etc. Figure 4 links energy with proper sanitation.

FIGURE 4. Sanitation and energy



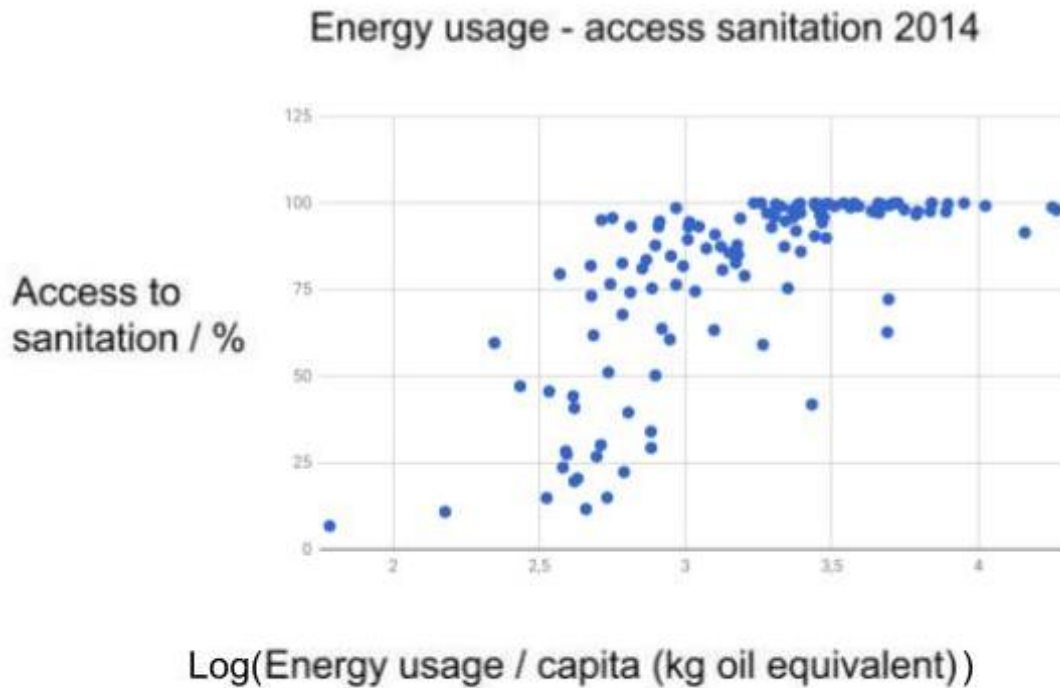
Source: Environmental Performance Index, Yale University, <https://epi.envirocenter.yale>.

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Especially, the rapidly growing African, Latin American and Asian mega-cities lack entirely proper sewage plants. Thus, dirty water is put into the big rivers where other cities downstream take their potable water.

The access to safe and stable electricity is crucial for health, schools, food, water, etc. Figure 5 links energy with proper sanitation.

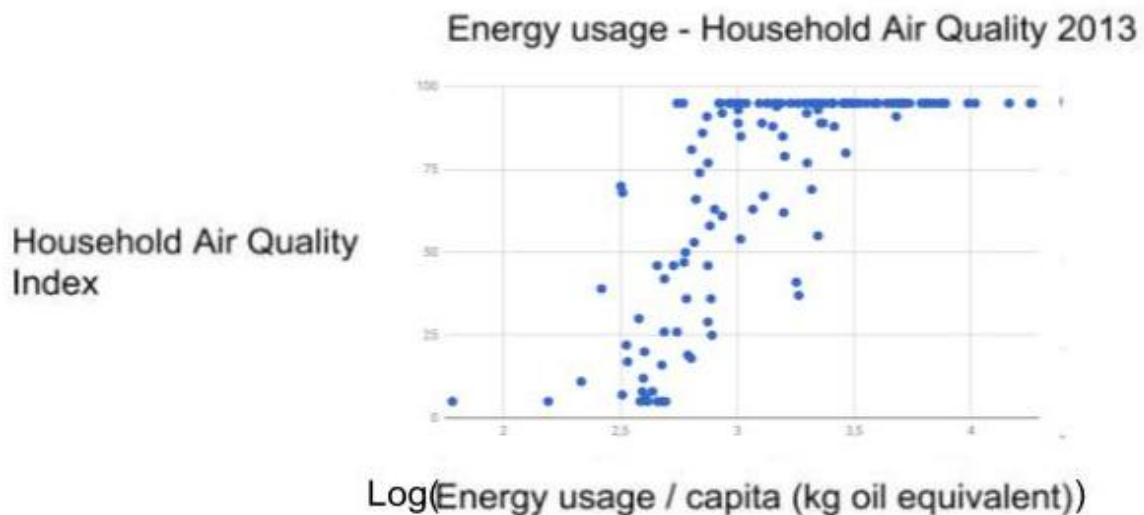
FIGURE 5: Sanitation and energy



Source: Environmental Performance Index, Yale University, <https://epi.envirocenter.yale>.
 IEA Statistics © OECD/IEA 2014 (<http://www.iea.org/stats/inde>)

The necessity of more energy in poor countries for proper sanitation, without which the life of humans is "salle", must be emphasized, especially when global warming diminishes clean water. Air quality too depends upon energy access (Figure 7).

FIGURE 6. Energy and air quality



Source: Environmental Performance Index, Yale University, <https://epi.envirocenter.yale>.
 IEA Statistics © OECD/IEA 2014 (<http://www.iea.org/stats/inde>)

Typical of many poor nations – Latin America, Africa, Asia - is the lack of predictable access to safe electricity, which hampers work and reduces environmental viability. The access to safe electricity is, it must be emphasized, absolutely central for health, schools, food, potable water, etc. Given the lack of enough energy in poor countries being conducive to the above bad living conditions, one

understands the hopes of the poor countries for help with energy transformation leading to better access to just energy!

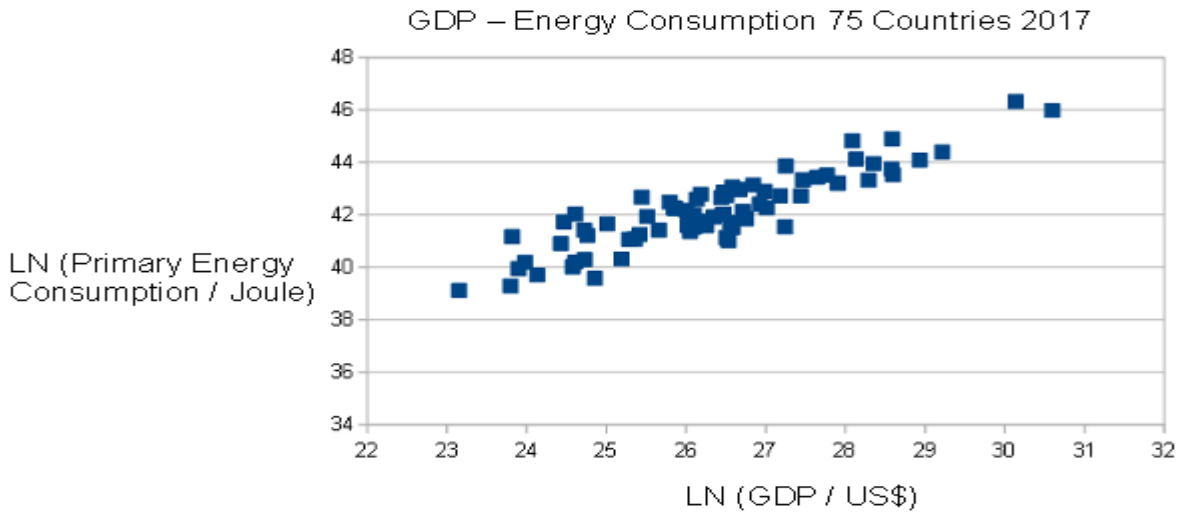
If, as we believe, energy consumption is behind global warming, the set of poor countries face a most difficult dilemma. On the one hand, they can demand much more energy like fossil fuels, but they then contribute much to

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climate change, On the other hand, global warming while fabricated by the rich nations and a few very populous poor nations, will have very negative consequences for poor nations. The only way out of this dilemma is that all countries contribute to halting global warming by turning to renewables, especially the set of rich countries.

Thus, energy consumption is closely related to country affluence. The poor countries can only improve living condition by increase energy supply. Their energy demand can only go up, because energy supply is highly skewed to the advantage of the rich countries – see Figure 8.

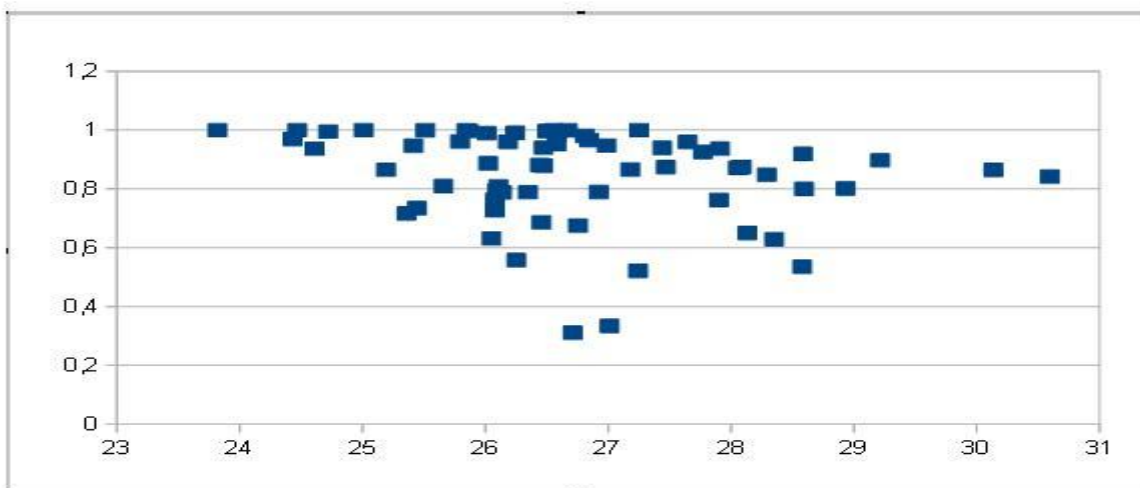
FIGURE 7. Global Energy Consumption 1990^- 2016



Poor countries need much more energy, but of a new kind. They need assistance to move to modern renewables, as they will give up fossil fuel only if there is compensation by other new energy sources. The enormous demand for more

and more of energy comes with a major drawback, namely the GHG emissions. Figure 9 has the picture for the carbon intensity of energy, resulting in CO₂s.

FIGURE 8. Energy and carbon intensity



Sources: BP Statistical Review of World Energy
World Bank Data Indicators

It must be underlined that GHG emissions like CO₂s are a function of GDP and population. Only very big poor countries have huge GHG emissions, like India, Brazil and

Indonesia. Small poor nations have little GHGs, as they lack energy in great quantity. Yet, poor countries wish to participate in saving the planet from the dangers of climate

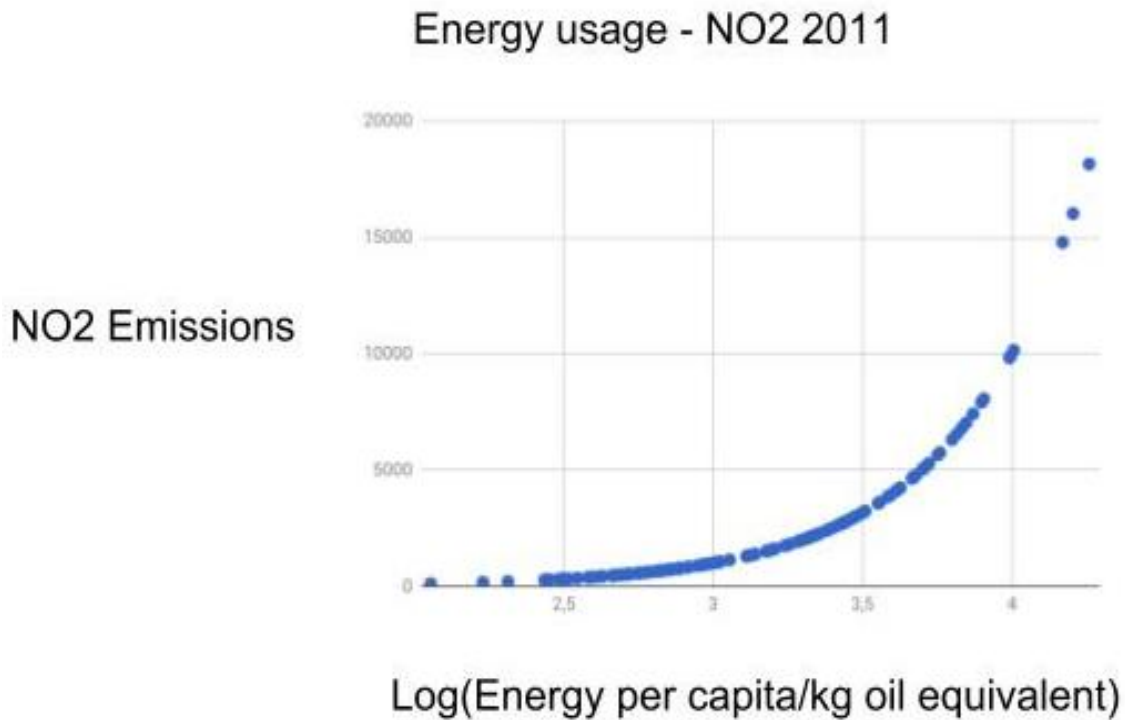
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change on the condition of financial assistance from the COP project and its Super Fund.

In terms of GHGs, rich countries have much higher levels of yearly emissions compared with poor countries, holding population constant. Only when a poor nation is huge, does it

have enormous CO₂s. Strict linear relation hold between GDP, energy consumption and GHGs, both on a per capita basis and on an aggregate country level. I will show one more picture (Figure 10).

FIGURE 9. Nitrous oxide and energy



Source: Environmental Performance Index, Yale University, <https://epi.envirocenter.yale>.
IEA Statistics © OECD/IEA 2014 (<http://www.iea.org/stats/inde>)

While the UNFCCC has mainly concentrated upon the CO₂s, the GHGs comprise several gases, one of which is the nitrogen oxide. Production of nitrous oxide stems from microbial activity in soils and in the ocean. Human sources of nitrous oxide are combustion of fossil fuels, biomass burning, industrial production of nitric acid, and fertilizers. Nitrous oxide enhances the greenhouse effect just as carbon dioxide does by capturing reradiated infrared radiation from the Earth's surface and subsequently warming the troposphere. It stays in the troposphere for about 120 years before moving into the stratosphere where it is conducive to the destruction of stratospheric ozone.

Climate and earth scientists have convinced a large majority of people that climate change occurs today. And the new theory of abrupt climate change entails that huge feedback loops will change the Earth already within the next one or two decades. It is a matter of Arctic ice meltdown and methane emissions from the permafrost that may bring temperatures much higher than the COP21 Treaty aimed at with uncertain disastrous consequences for both Mother Earth and mankind. Lots of natural science research still remains to be done in order to reduce the large uncertainties

about temperature rise and its consequences for a number of vital outcomes for humanity.

DECARBONISATION AND GEO-ENGINEERING

Starting from the nature of public international law (PIL), the COP21 Treaty is based on voluntary emissions reductions, involving a COP secretariat with mostly information gathering tasks. The principle of state sovereignty permeates all of PIL. The suggested speed of decarbonisation is slow: the COP21 policies involve a *halt to the increase* in CO₂ emissions by 2020, a 30% reduction in CO₂s by 2030 (absolutely or relatively?) and more or less total decarbonisation by 2075. But what are the means to these gigantic energy transformation goals? Basically, it is all about managing energy transformation, as the augmentation of GHGs stems from human use of energy resources.

As CO₂s have risen too much since the industrial revolution, they must somehow be reduced in total. The COP strategy is to first halt the increase in CO₂s and then reduce them, first by 30 per cent and later completely, which is of course utopian. Abrupt climate change makes this

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strategy obsolete, because it is too slow and ineffective. There are lots of innovative activities, but CO₂s keep going up.

The only remedies are: 1) complete and immediate stop of coal and charcoal; 2) massive construction of solar power parks; tests of geo-engineering on a large scale. But these

measures are too radical for global coordination and also the G20 nations that are responsible for 70% of total CO₂s. Let us see what solar energy revolution would really entail in terms of management tasks for global coordination, assisted by for instance the COP21 Secretariat and the IPCC – see Table 1 with Morocco’s giant plants as benchmark.

Table 1. Number of Ouarzazate plants for 40 per cent reduction of CO₂ in some giant countries (Note: Average of 250 - 300 days of sunshine used for all entries except Australia, Indonesia, and Mexico, where 300 - 350 was used).

Nation	Co2 reduction pledge / % of 2005 emissions	Number of gigantic solar plants needed (Ouarzazate)	Gigantic plants needed for 40 % reduction
United States	26 - 28 ⁱ	2100	3200
China	none ⁱⁱ	0	3300
EU28	41 - 42	2300	2300
India	none ⁱⁱ	0	600
Japan	26	460	700
Brazil	43	180	170
Indonesia	29	120	170
Australia	26 – 28	130	190
Russia	none ⁱⁱⁱ	0	940
World	N/A	N/A	16000

Note: i)The United States has pulled out of the deal; ii) No absolute target; iii) Pledge is above current level, no reduction; iv) Upper limit dependent on receiving financial support; v) EU joint pledge of 40 % compared to 1990.

It will of course be argued against such a 40 percent speedy reduction in CO₂s that it leads to economic recession. So may it be! But it would reduce future much higher costs. After all, economies adapt and will recover due to all new

investments needed in a decarbonised world. Ramesh (2015) emphasizes that India needs much economic assistance for decarbonisation – a giant task for global coordination to assist poor nations!

Let us look at the American scene in Table 2.

Table 2. Number of Ouarzazate plants necessary for 40 per cent reduction in CO₂ (Note: Average of 250 - 300 days of sunshine per year was used for Canada, 300 – 350 for the others).

Nation	Co2 reduction pledge / % of 2005 emissions	Number of gigantic solar plants needed (Ouarzazate)	Gigantic plants needed for 40 % reduction
Canada	30	230	300
Mexico	25	120	200
Argentina	none ⁱⁱ	0	80
Peru	none ⁱⁱ	0	15
Uruguay	none ⁱⁱ	0	3
Chile	35	25	30

Some Latin American countries have lots of hydro power, but it may dwindle rapidly due to abrupt climate change. Solar power would be excellent energy for Mexico and Brazil for example.

Table 3 has the data for the African scene with a few key countries, poor or medium income. As they are not in general energy consuming on a grand scale, like Asia, decarbonisation should be feasible with Super Fund support.

Table 3. Number of Ouarzazate plants necessary in 2030 for 40 per cent reduction in CO₂ (Note: Average of 300 - 350 days of sunshine per year was used).

Nation	Co2 reduction pledge / % of 2005 emissions	Number of gigantic solar plants needed (Ouarzazate)	Gigantic plants needed for 40 % reduction
Algeria	7 - 22 ⁱ	8	50
Egypt	none ⁱⁱ	0	80
Senegal	5 - 21	0,3	3
Ivory Coast	28-36 ^{iv}	2	3
Ghana	15 - 45 ^{iv}	1	3
Angola	35 - 50 ^{iv}	6	7
Kenya	30 ^{iv}	3	4
Botswana	17 ^{iv}	1	2
Zambia	25 - 47 ^{iv}	0,7	1
South Africa	none ⁱⁱ	0	190

Note: i)The United States has pulled out of the deal; ii) No absolute target; iii) Pledge is above current level, no reduction; iv) Upper limit dependent on receiving financial support; v) EU joint pledge of 40 % compared to 1990.

Table 4 shows the number of huge solar parks necessary for a few Asian countries.

Table 4. Number of Ouarzazate plants necessary for 40 per cent reduction in CO₂s. (Note: Average of 250 - 300 days of sunshine was used for Kazakhstan, 300 - 350 days of sunshine per year for the others).

Nation	Co2 reduction pledge / % of 2005 emissions	Number of gigantic solar plants needed (Ouarzazate)	Gigantic plants needed for 40 % reduction
Saudi Arabi	none ⁱⁱ	0	150
Iran	4 - 12 ^{iv}	22	220
Kazakhstan	none ⁱⁱ	0	100
Turkey	21	60	120
Thailand	20 - 25 ^{iv}	50	110
Malaysia	none ⁱⁱ	0	80
Pakistan	none ⁱⁱ	0	60
Bangladesh	3,45	2	18

Given the economic advances in Asia, most countries need a lot of solar power parks for decarbonisation. The COP21 management would be able to help.

Finally, we come to the European scene.

Table 5. Number of Ouarzazate plants necessary for 40 per cent reduction in CO₂s (Note: Average of 250 - 300 days of sunshine per year was used)

Nation	Co2 reduction pledge / % of 2005 emissions	Number of gigantic solar plants needed (Ouarzazate)	Gigantic plants needed for 40 % reduction
Germany	49 ⁱⁱ	550	450
Fance	37 ^v	210	220
Italy	35 ^v	230	270
Sweden	42 ^v	30	30

Note: i)The United States has pulled out of the deal; ii) No absolute target; iii) Pledge is above current level, no reduction; iv) Upper limit dependent on receiving financial support; v) EU joint pledge of 40 % compared to 1990.

ASYMMETRIC INFORMATION

The giant polluters have plans for enormous augmentation in energy supply, but they do not say that at the COP reunions (Conka, 2015; Vogler, 2016).

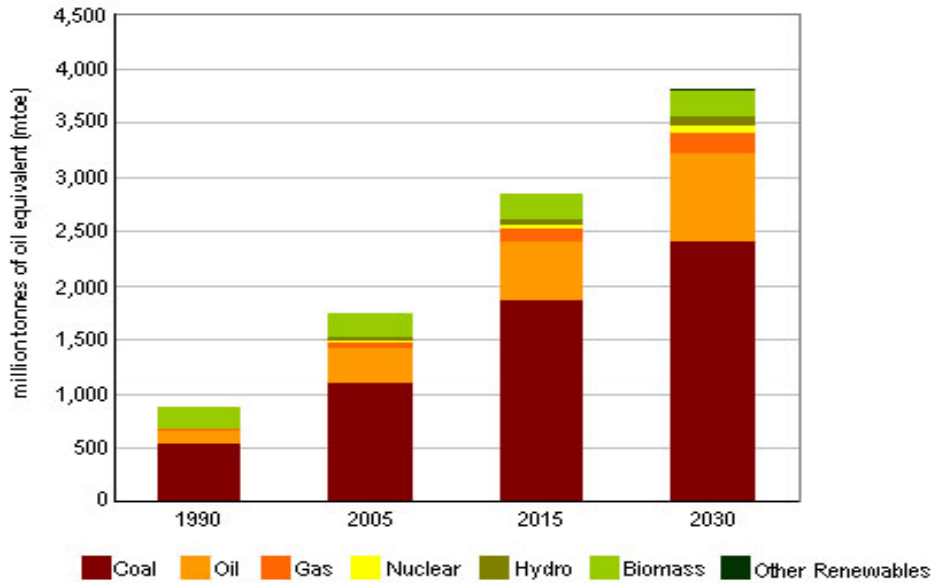
China

China now enters the First World, as it has long passed its “take-off” point in time around 1980 and has pursued a successful “catch-up” policy for a few decades. Its energy consumption, especially fossil fuels, has skyrocketed with

GDP, resulting in the largest CO2 emission globally. Figure

11 has a projection for China.

FIGURE 10. Energy projection for China



http://www.wrsc.org/attach_image/chinas-projected-energy-growth-fuel

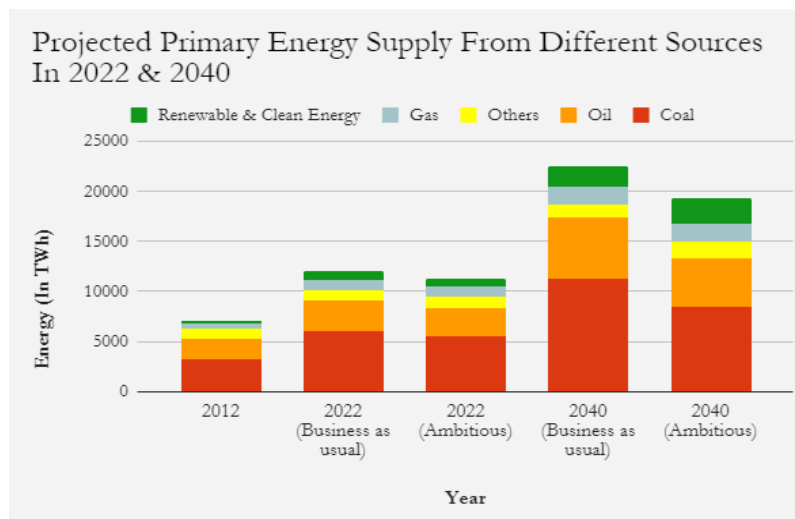
Decarbonisation does not seem highly probable. Much hope was placed at a recent reduction in CO2s, but water shortages forced China to revert to coal in 2017 with attending augmentation of CO2s. China is investing in both renewable and atomic power, but it also plans for large energy increase in the coming decades with lots of energy consuming new projects.

India

In Indian energy policies, it is emphasized that developmental goals take precedence over climate change

considerations. Thus, all Indian households must have access to electricity and only sustained rapid economic growth can reduce poverty. India has a “take-off” economy that delivers affluence for the first time since independence. But it is based on fossil fuels. India looks into other sources of energy, as long as socio-economic development is not hindered. Figure 12 shows the main features of future planning.

FIGURE 11. India`s energy future



Source: <https://scroll.in/article/843981/indias-new-energy-policy-draft-projects-coal-fired-capacity-will-double-by-2040-is-that-feasible>

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India has rapidly become a major CO2 emitter due to its high growth rates since 1990. It uses lots of coal, stone or wood. Charcoal is bad for households and results in forest destruction. India tries to broaden its energy supply to modern renewables, like solar, wind and hydro power. Yet, it will remain stuck with fossil fuels for decades. It needs assistance from the COP21 project, especially for solar power parks. Building more dams is very risky, as global warming reduces water assets. Figure 9 indicates the India cannot meet its COP21 promises, as Ramesh (2015) underlines.

Brazil

FIGURE 12. Energy plans in Brazil

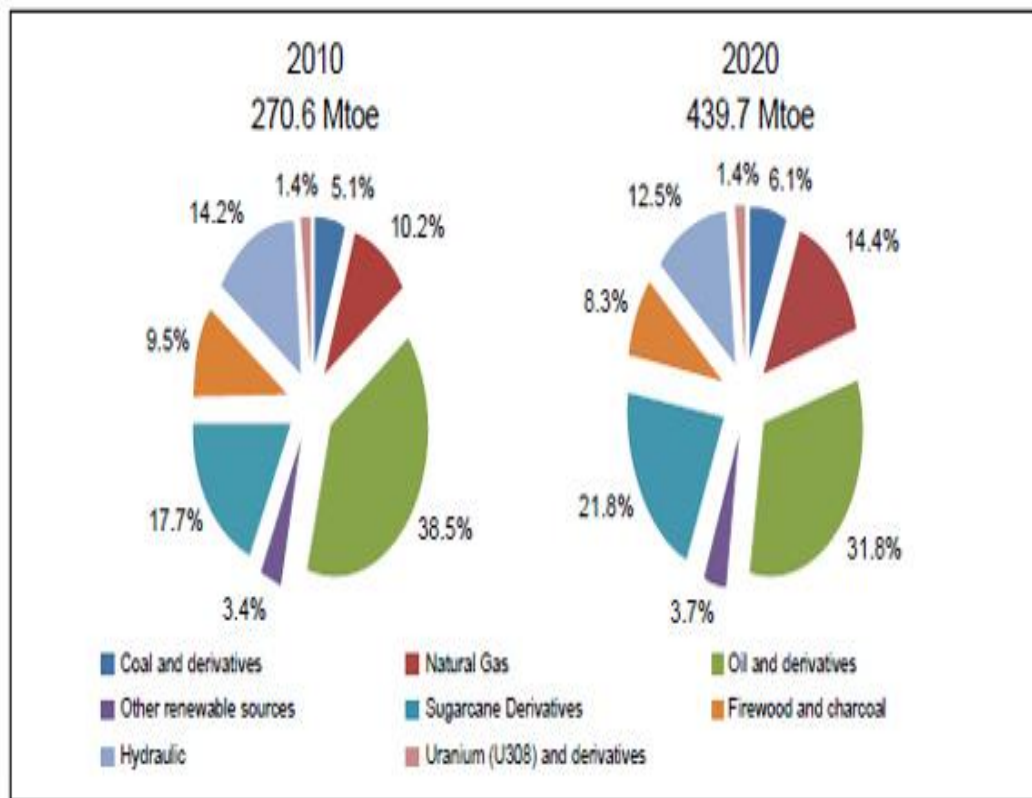


Figure1–Evolution of the total primary energy supply

Source: http://www.scielo.br/scielo.php?pid=S0103-40142012000100017&script=sci_arttext&lng=en

Brazil has already a diversified supply of energy. However, since the country plans to almost double its energy supply, its dependence upon fossil fuel will grow, also upon coal. It dreams about building many more dams in the Amazons, but future water shortages due to climate change may make these plans unrealistic. The country needs COP21 assistance to turn to solar power massively, in order to eliminate first and foremost coal and charcoal. The rain forest is part of Brazil’s emission picture where burning and logging reduce its carbon uptake.

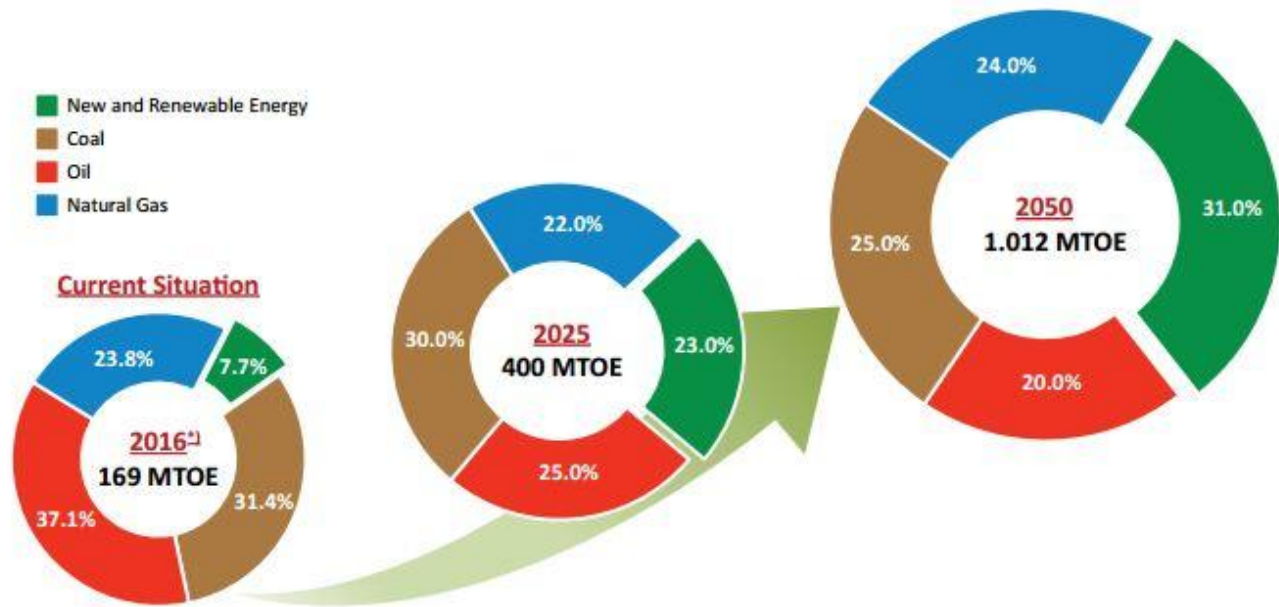
Brazil is a “catch-up” with its “take-off” point long ago in the 20th century.. Compared with India, but it never really succeeds to close the gap to North America, tumbling now and then into dictatorship or recession. Figure 13 shows its stylised energy plans – are they in agreement with COP21 hopes of decarbonisation?

Indonesia

Indonesia is like India a “taker-off” country, enjoying rapid economic growth with attending augmentation in energy consumption. The outcome is that this giant nation has quickly become a major GHG emitter. What make the situation worse is the burning down of the rain forest in parts of Indonesia.

FIGURE 13. Energy future for Indonesia

INDONESIA'S NEW & RENEWABLE ENERGY TARGET



	2016	2025	2050
NRE Mix	7.7 %	23%	31%
Energy Supply	169 MTOE	400 MTOE	1.012 MTOE
Generation Capacity	59 GW (NRE 8 GW)	136 GW (NRE > 45 GW)	443 GW (NRE > 167 GW)
Electricity/Capita	956 kWh	2.500 kWh	7.000 kWh
Electrification Rate	91%	~100%	~100%

Such a phenomenal augmentation of energy is out of line with the aim of global decarbonisation.

SOCIAL SCIENCE MODELING COORDINATION FAILURE

The most influential social scientist ever, Max Weber from Freiburg and Heidelberg, stated in a famous passage the following about means and ends in human behavior:

“Any thoughtful reflection on the last elements of meaningful human activity is first of all bound to the categories of 'ends' and 'means’”. (Weber, 1922)

This model of mean-end rationality recurs in Weber’s theory of public administration. Actually, Weber regarded the Western civilization as basically founded upon means-end rationality, or technical calculation, in both state (the bureaucracy) and market (the modern corporation). Now, we must ask: Can the global governance project COP21 deliver outcomes in manner that fits Weber’s notion of means-end rationality? The main theories in public administration as well as in management entail that accomplishing the decarbonisation goals globally will run into difficulties.

Bounded rationality

Herbert Simon developed his bounded rationality theory by emphasizing the cognitive limitations of men and women.

He devoted much of his scholarship to criticize the relevance of the neo-classical decision-making model in economics to private management and public administration (Simon, 1996). In government agencies and big firms, decisions could not meet all the requirements of full or completely comprehensive rationality. Instead, decision-making just “muddles through”, as C. Lindblom (1959) argued, following H. Simon. Not all means were known, not all their probabilities could be stated, and not all goals were taken into account – bounded rationality, i.e. incomplete marginal decision-making.

Implementation hiatus

Wildavsky took up marginalism or incrementalism, applying it first to budget-making and then to policy implementation in general. When the national government decides about policies, how can regional or local governments implement these? Due to cognitive limitations and the rapidly changing situation, regional and local governments may reject the means and ends of the national government, and try other implementation strategy themselves (Pressman and Wildavsky, 1973, 1984). Policy identity could be entirely

lost due to space and time. The same warning – *Wildavsky's hiatus* – applies to the implementation of the COP21 Treaty goals I, II and III: unintended and dysfunctional outcomes, goals displacement and unrecognized results. There may even in relation the COP21 Treaty be a risk for implementation disaster – what Olsen and March (1976) call the “garbage can decision process”. So many players, so much noise, too large confusion about ends and means!

Rational foolishness

Game theory rests upon the assumption of full rationality in behavior, meaning complete information and transitive preferences, but means-end rationality is far from guaranteed. In 1950, Albert Tucker invented a game showing how individually rational actors can end up with the worst outcome for both collectively – the Prisoner's dilemma game (PD), already anticipated by Hobbes in *Leviathan* (1651). The COP21 Treaty introduces a so-called common pool regime in Elinor Ostrom's (1990) theory saying that voluntary cooperation by those concerned by externalities can solve the free rider problematic. The COP21 is an extremely large CPR, instructed to protect a common pool with free access. Ostrom was too optimistic that CPRs that they can handle the PD gaming, as defection is always an alternative (Dutta, 1998)

The threat to this global CPR is renegeing, which one big partner already has done. Turkey may follow suit and perhaps also Australia. The relevant model of the management of the COP21 Treaty is the N-person PD game, which offers numerous possibilities for *defection*: goal displacement, insufficient means, information cheating, lack of funding, internal political instability, global super power clash, etc. To overcome renegeing, there must be a system of *selective incentives*, sponsored by the Super Fund.

Utopian strategy

World star economist J. Sachs preaches this message (Sachs, 2015), but it is only ethics. Economics is, as Carlyle said, a “dismal science”, analysing the IS and not the OUGHT. And the Malthusian predicament is with us with a vengeance in the form of the energy-emissions conundrums. For Africa, it could result in extreme drought, famine, deforestation, desertification, water shortages, etc. With the policy changes in Washington, DC, the entire COP21 framework is up in the air. I do not believe that the US will contribute to the much needed Super Fun.

Insisting upon the positive nature of economics, “positive” referring to the understanding and prediction of the IS, one cannot but realize that sustainable development theory deals with the OUGHT. The gulf between normative utopia and harsh reality forces one to look for how adherents of sustainable economics get from realities to vision. Take the example of Sachs, stating about SDG (*sustainable development goals*):

... the SDGs need the identification of new critical pathways to sustainability. Moving to a low-carbon energy system, for example, will need an intricate global interplay of research and development, public investments in infrastructure (such as high-voltage direct current transmission grids for long-distance power transmission), private investments in renewable power generation, and new strategies for regulation and urban design. The task is phenomenally complex.

But Sachs does not inform us how something so “phenomenally complex” is to come about, going from the IS to the OUGHT. He continues:

Market-based strategies (such as carbon taxation) can help to simplify the policy challenge by steering private decisions in the right direction, but politics, planning, and complex decision making by many stakeholders will be unavoidable.

Source: www.thelancet.com Vol 379 June 9, 2012: p.2010

Of course, but what is the likelihood that a carbon tax can be put in place (where, how much) as well as how large is the probability that planning works? Only wishful thinking! Sachs realizes the gap between desirability and feasibility, but he confronts the gap by almost religious make beliefs:

The SDGs will therefore need the unprecedented mobilisation of global knowledge operating across many sectors and regions. Governments, international institutions, private business, academia, and civil society will need to work together to identify the critical pathways to success, in ways that combine technical expertise and democratic representation. Global problem-solving networks for sustainable development— in energy, food, urbanisation, climate resilience, and other sectors— will therefore become crucial new institutions in the years ahead.

Source: www.thelancet.com Vol 379 June 9, 2012

Nothing is durable in economic life. A couple of years ago, there was a fear for a global Hubbert peak, but now there are huge amounts of shale oil and gas. If fusion power becomes available soon, the energy-emission conundrum will disappear.

Reneging

In ocean games, the risk of coordination failure is omnipresent. The COP21 Treaty is a common pool regime, vulnerable to the n-1 problem (I can cheat on the others) and the 1/n problem (why do anything for others?). Governments can easily renege upon global coordination, as the US has already done. How could such a giant policy be managed for such a long time without any control mechanisms?

CONCLUSION

Governments pay lip service to the threat of human extinction. It is business as usual among the Great Powers, in the Middle East and South China Sea, in markets and financial institutions. This is not what climate and earth scientists would predict, but it is in accordance with social science theories of collective action.

Given the evidence about abrupt climate change, the Left in the world has only one task, namely halt global warming. In the left wing new daily journal *Social Europe*, not one single article so far has raised the urgency of anti-climate policy-making in global coordination. No time for utopian experiments, as time is tight (Stern, 2007, 2015)

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