**International Journal of Agriculture, Environment and Bioresearch**

Vol. 2, No. 05; 2017

ISSN: 2456-8643

# UPCOMING COP23: SUCCESS OR FAILURE

**Jan-Erik Lane**

Fellowwith Public Policy Institute, BELGRADE ; Address: 10 Charles Humbert, 1205 Geneva; 559 A, 3rd Floor, Thuya Street, 9th Quarter, Yangon. Myanmar.

## ABSTRACT

The UNFCCC is soon facing its most critical reunion in global environmental coordination in Bonn this November. Can some 190 governments start putting the COP21 Treaty into effect ? Or will there be new passivity, or perhaps more reneging The global warming process just rolls on: more heat means more energy, more energy leads to more work or motion, increasing wind and water power and storms - devastating areas, and releasing the methane threat. Can COP23 stop climate change from irreversibility? Only solar and wind power and electrical vehicles constitute a viable response.

**Keywords:** global decarbonisation, Stephen Hawking, GDP-GHG links, energy, Quarzazate parks, methane

## Introduction

We are coming closer to the major event this fall, namely the UNFCCC reunion of some 190 governments and a thousand journalists for the COP23 conference on climate change. Sponsored by islands state Fiji, the Bonn meeting in late November will send signals about the anti-global warming fight. The COP21 set the objectives – GOAL I, II and III – but the COP23 has to decide over the means to these ends: strategy, technology, funding of decarbonisation in the 31$^{st}$ century. If COP23 fails, then Hawking's warming about irrevocable climate changes will become more likely.

## ENERGY

Energy is the basics. It generates not only survival but also affluence and wealth, being vital to both poor and rich countries. If energy consumption is reduced, there will be global economic recessions and mass poverty as well as unemployment. But Planet Earth consumes too much energy from one major source: burning fossil fuels. All forms of energy be measured, and these measures are translatable into each other – a major scientific achievement. One may employ some standard sources on energy consumption and what is immediately obvious is the immensely huge numbers involved – see DIAGRAM 1.

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**DIAGRAM1**. Energy consumption 2015 (Million Tons of oil equivalent)
Total %

| | | |
|---|---|---|
| Fossil fuels | 11306,4 | 86,0 |
| Oil | 4331,3 | 32,9 |
| Natural Gas | 3135,2 | 23,8 |
| Coal | 3839,9 | 29,2 |
| Renewables | 1257,8 | 9,6 |
| Hydroelectric | 892,9 | 6,8 |
| Others | 364,9 | 2,8 |
| Nuclear power | 583,1 | 4,4 |
| Total | 13147,3 | 100,0 |

Source: BP Statistical Review of World Energy 2016

Table 1 holds the answer to why CO2 and GHG emissions have become the global headache number 1. Energy for humans and their social systems come to an average of 90% from burning fossil fuels: stone and wood coal, oil and gas. And people do that all over the world, though to very different degrees from 100% to less than 50% of all energy consumption, because it is necessary for affluence and survival. The enormous expansion in the energy consumption of fossil fuels has allowed the world to take on many new inhabitants, as well as reducing poverty in the Third World and much enhancing affluence and wealth in the First world.

Energy from fossil fuels is conducive to global warming, and thus the COP21 has decided about decarbonisation. Goal II speaks about a 20-40 per cent reduction until 2030, to be replaced by renewable energy and some atomic power This amount to an enormous transformation, where each country is responsible for its reductions of fossil fuels, depending upon their specific country predicament as to energy consumption pattern (Stern, 2015). Some countries rely heavily upon coal or oil and gas, others have considerable hydro power, while poor countries employ wood coal, leading to deforestation and desertification.

The problems of COP23 are threefold, namely:

i) International management of decarbonisation processes;
ii) Avoiding defection, or stopping free riding countries;
iii) Taking into account the new methane threat.

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All theories need empirical confirmation. When the polar ice mountains began to collapse, it seemed decisive evidence for the global warming theory, just like extremely volatile climate with floodings, etc. Other important test implications like glacier retreats everywhere, ocean warming and acidification as well as desertification in Africa also gave support for global warming theory. Denials of climate change appear more and more unfounded, although it is true that more of CO2 may benefit some specific fauna or environment niches.

## GLOBAL WARMING THEORY (GWT)

One may distinguish between two parts in GWT, one much developed set of hypotheses about the natural sciences' contribution to understanding climate change, and one poorly developed social sciences' set of hypotheses about the difficulties in engaging in collective action, like the COP21 common pool regime (CPR) for decarbonisation.

The first anticipation of the global warming mechanism was done by Frenchman J. Fourier in the early 19$^{th}$ century, but the theory was developed by Swedish chemist Arrhenius around 1895. He calculated that a doubling of CO2 ppm would be conducive to a 5 degree increase in global average temperature, which is not too far off the worst scenario for the 21rst century, according to UN expertise now.

Yet, it was not until Stephen Schneider published Global Warming in 1989 that the theory started to receive wide attention, no doubt strengthened by the work of Keeling in measuring CO2 ppm globally. Moreover, techniques for viewing the CO2 layer were developed, increasing the attention to climate change.

Now, the UN reacted with creating a few bodies to look into the changes going on, one of which was the COP framework. The economists jumped in besides the natural scientists, worried about the future costs of this transformation of the atmosphere. On the one hand, Kaya and associates (1998) presented a model that explained CO2:s with energy and energy intensity of GDP. On the other hand, Stern (2007) called global warming the largest externality in human history, calling for international governance in order to stem the growth of greenhouse gases. Stern outlines a number of activities aimed at reducing CO2 emissions, promising also a Super Fund to channel money from rich advanced nations to poor countries and developing economies. As little has been done through the UN system of meetings and agencies up to date, Stern (2015) later asked: "What are we waiting for?"

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The part of GWT analyzing the coordination efforts within the UNFCCC as well as the different country responses to climate change is far less developed than the natural sciences' part. One finds practically nothing in the UNFCCC documents about the principal problems in large scale international governance, like e.g. defection. One may speak of two currents of social science theory that are highly relevant for GWT:

*Implementation theory*: In the discipline of public administration and policy-making, some ideas about the so-called "implementation gap" – *Wildavsky's hiatus* – are highly relevant to the COP21 project (Pressman and Wildavsky, 1973, 1984). The COP21 has three main objectives: halt CO2 increases by 2018-2020 (GOAL I), decrease CO2 emissions considerable by 2030 (GOAL II) and achieve full decarbonisation by 2070-80 (GOAL III).

But how are they to be implemented? No one knows, because COP21 has neglected what will happen after the major policy decision. The COP21 project outlines many years of policy implementation to reach decarbonisation, but which are the policy tools?

*Game theory*: A CPR is vulnerable to the strategy of reneging, as analysed theoretically in the discipline of game theory. The relevant game for the CPR is the PD game, where the sub game perfect Nash equilibrium is defection in a finite version of this game (Dutta, 1999). This is not recognized by Elinor Ostrom (1990) in her too optimistic view about the viability of CPR:s. It is definitely not the case that Ostrom has overcome Hobbes, as one commentator naively declared when she was awarded both the Nobel prize and the Johan Skytte prize (Rothstein' website 2014).

Reneging is a major obstacle to the COP21 project. Can one expect India to stay in this CPR when its coal dependency is seriously questioned (Ramesh. 2015)? And how about South Korea and Australia that are so eager to prioritize economic growth? When any country runs into energy supply problems, then its government will of course renege somehow. Only selective incentives can make the difference, but they call for strict and transparent management from international governance and funding agencies.

The risk of COP management – internationally, nationally and local – is the massive occurrence of so-called garbage can decision-making. It constitutes fundamental chaos in outcomes, containing policy failures all over the place. It is not only collective action cheating, but covers also ambiguous goals, uncertain means as well as cost inefficiencies.

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Politicians speak of energy transformation but refuse any cut back upon economic development. All energy transformation must minimize fossil fuels, given the restriction of maintaining a decent level of economic growth. They even dream of large increases in energy supply and demand to decrease poverty and increase affluence.

There appears to an almost complete reliance from the representatives of states of the world upon the UNFCCC and its Paris Treaty. But can its GOAL I, II. III really be implemented? International coordination tends to be sluggish, conflictual and open to reneging. Civil society is split about climate change, demanding sometimes too much like a totally new economy (Sachs, 2015). The denial of climate change still has their adherents (Wildavsky, 1997; Simon, 20002; and Lomborg, 2007). Often global warming is mixed up with general environmentalism, global re-distributional justice (Sachs, 2015).

## CO2 AND GHG EMISSIONS

One may first with emphasize that things are changing rapidly since the Paris Treaty from 2015, the COP21 Agreement. There is one major defector, the US, which raises the question of new defections. On the one hand, many country report declining carbon dioxide emissions (CO2), as gas replaces coal, modern renewables are constructed, and atomic energy becomes relevant again. On the hand, fossil fuel consumption is increasing in air- and sea-transportation, new airports are built with massive cement like in new infra structure and Gulf area. The number of vehicles is augmenting, just as their engine size. To check both decreases and increases in CO2:s, one should concentrate more upon total greenhouse gases (GHG), because they also include the now rapidly augmenting methane emissions, from land and sea.

If energy consumption is the key to understanding CO2 emissions (Kaya and Yokobury, 1998), then what drives the enormous demand for energy globally? Reply, the human drive for affluence, need satisfaction and wealth. Figure 1 shows the two trends going together: GDP per capita growth (affluence per person) and CO2 emissions per capita from 1990 to 2015 – longitudinal analysis.

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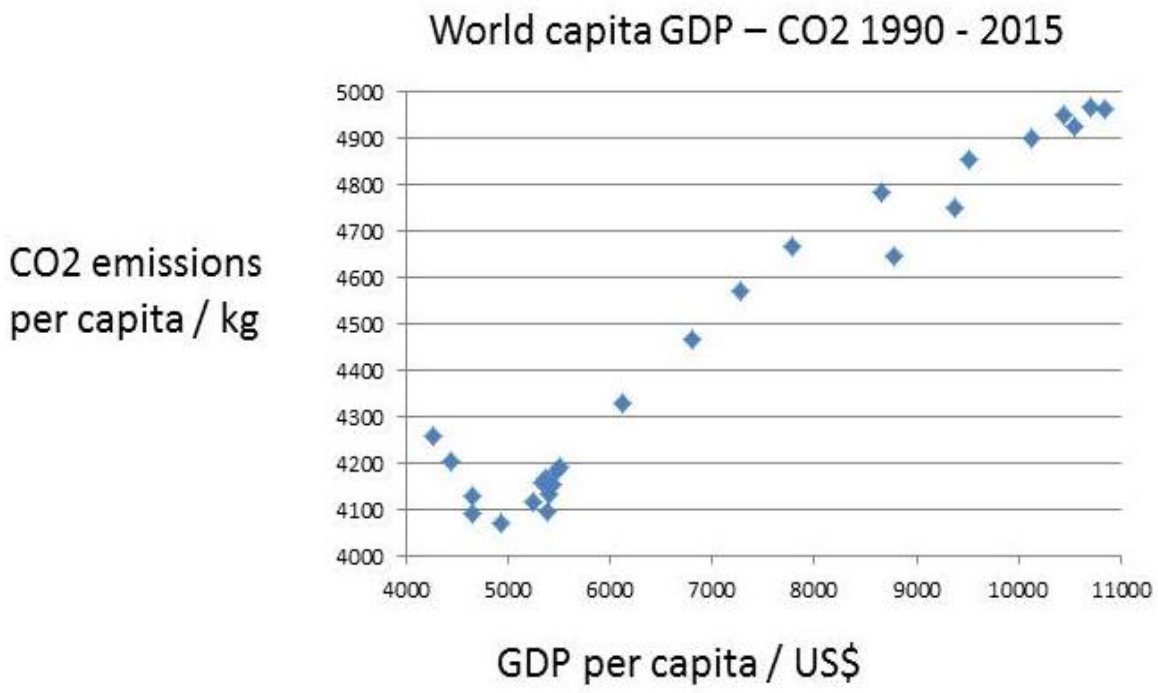
**FIGURE 1**. 1990-2015: Per capita affluence and CO2s: y = 0,15x; $R^2$ = 0, 95




Sources: World Bank Data Indicators, data.worldbank.org; EU CO2 Data Base EDGAR, edgar.jrc.ec.europa.eu

To check both decreases and increases in CO2:s, one should concentrate more upon total greenhouse gases (GHG), because they also include the now rapidly augmenting methane emissions, from land and sea. Besides methane, the GHGs also cover the small noxcious F-particles. Figure 2 shows the increase in methane emissions for available data. Probably, the increase is now even higher (Figure 2). To fully understand the global warming process from anthropogenic causes, one must now add the methane emissions to the CO2s.

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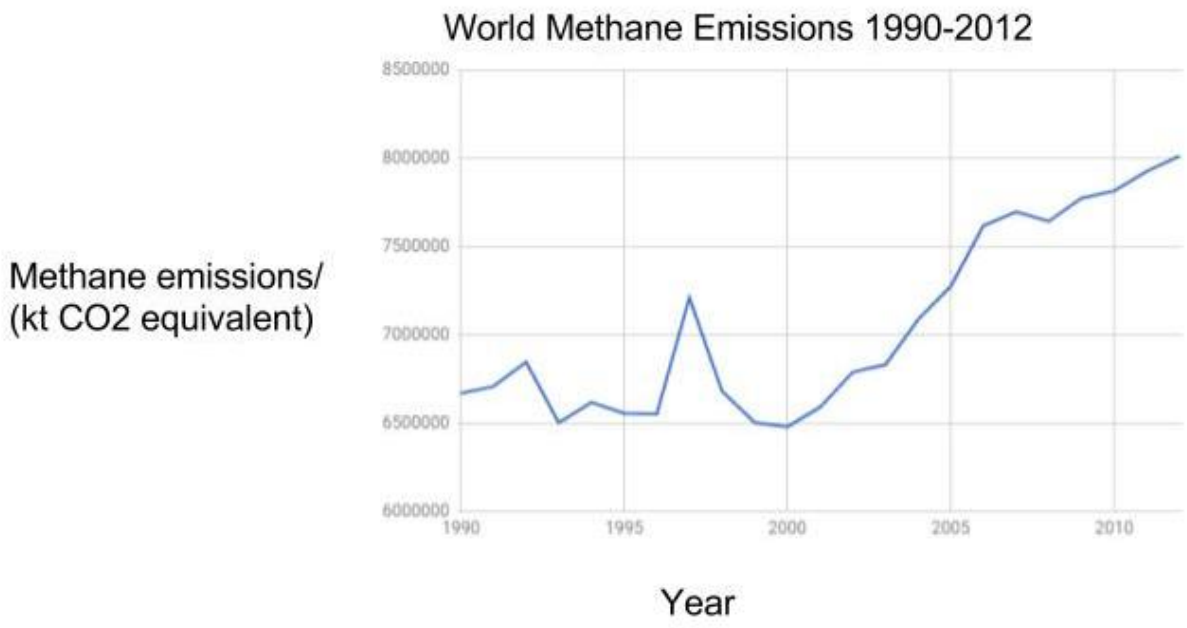
**FIGURE 2.**




The established Keeling curve estimates the link between CO2s and temperature rise, but it should augmented to include all GHGs, i.e. the CO2 equivalent measure.

**TEMPERATUR RISE**

.One may attempt to calculate exactly how increases in greenhouse gases impact upon temperature augmentations. Take the case of CO2s, where a most complicated mathematical formula is employed:

(1) $T = Tc + Tn$, whereT is temperature, Tc is the cumulative net contribution to temperature from CO2 and Tn the normal temperature;

But when it comes to methane, it is not known whether the tundra will melt and release enormous amounts. But methane does not stay in the atmosphere long, like CO2s. For the other greenhouse gases, there is no similar calculation as for the CO2s: If humans could eat less meat from cows, it would mean a great improvement, as more than a billion cows emit methane. Food from chicken should replace beef meat and burgers. The general formula reads:

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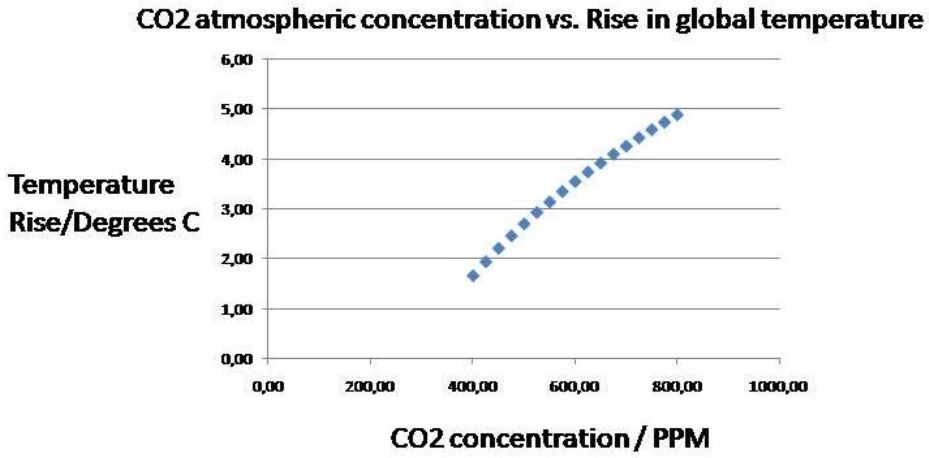
(2) $dT = \lambda * dF$, where 'dT' is the change in the Earth's average surface temperature, 'λ' is the climate sensitivity, usually with degrees Celsius per Watts per square meter (°C/[W/m2]), and 'dF' is the radiative forcing.

To get the calculations going, we start from lambda between 0.54 and 1.2, but let's take the average = 0.87. Thus, we have the formula (Myhre el al, 1998):

Formula: 0.87 x 5.35 x ln(C/280).

Figure 3 shows how CO2 emissions may raise temperature to 4-5 degrees, which would be Hawking's worst case scenario.

**FIGURE 3**. CO2s and temperature rise in CELCIUS




No one knows where the critical temperature rise occurs, i.e. from which Celsius degree global warming becomes "irreversible", to use Stephen Hawking's expression. It could be as low as + 2 Celsius or as high as +5 Celsius.

To calculate the temperature implications of GHG:s now, one must move beyond the so-called Keeling curve. Diagram 1 shows the conventional CO2-temperature curve, but it needs to be complemented by the temperature rising calculation for methane emissions.

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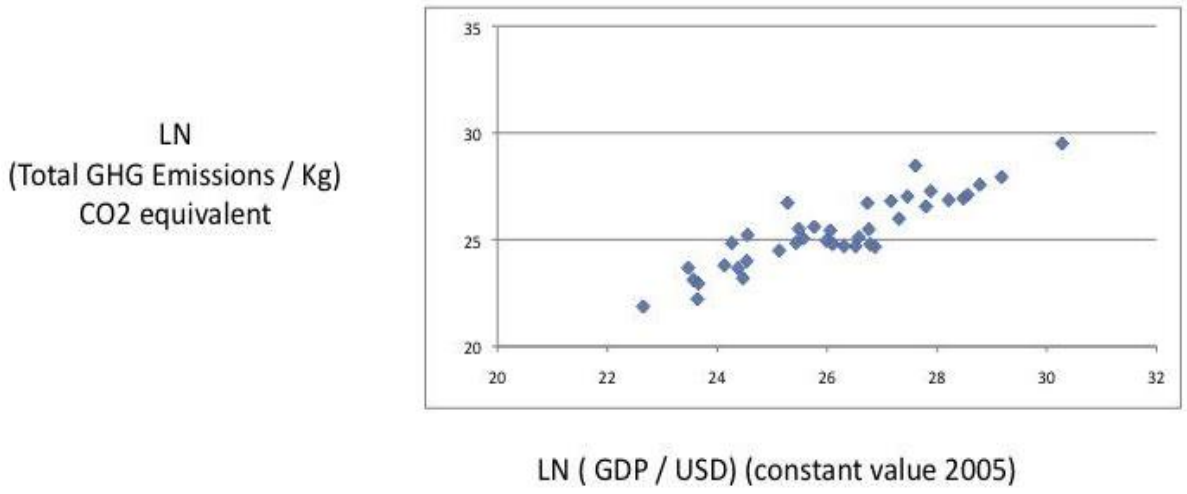
The Keeling curve only takes CO2 into account, indicating now a temperature rise of 1,5 degrees Celcius. However, this must be revised upwards due to the methane threat.

**METHANE**

The global situation with regard to the greenhouse gases appears from Figure 4, where the economic expansion, measured by the GDP, is accompanied by an inexorable growth in GHGs. This trend must be halted and reversed, as otherwise the 21st century will be the greenhouse century of mankind, as Stephen Schneider warned already 1989.

**FIGURE 4.**Global Link: GDP-GHC Globally: y=0.85x, R2=0.80




Source: World Bank Data Indicators

There are several greenhouse gases, but the two biggest are the CO2s and methane. The UNFCCC has concentrated upon halting and reducing carbon dioxide, but now we are about to face a methane threat. DIAGRAM 2 shows that methane is growing faster than CO2.

**DIAGRAM 2.** GHC minus CO2s

Year GHG other than CO2 / Tton

| | |
|---|---|
| 1990 | 15,56 |
| 1995 | 15,20 |
| 2000 | 14,74 |

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| | |
|---|---|
| 2005 | 17,20 |
| 2010 | 17,05 |
| 2011 | 18,47 |
| 2012 | 18,97 |

Source: EDGARv4.2FT2012, European Commission, Joint Research Centre (JRC)/PBL Netherlands Environmental Assessment Agency. Emission Database for Global Atmospheric Research (EDGAR), release version 4.2

**DECARBONISATION**

Consider now Table 1, using the giant solar power station in Morocco as the benchmark – How many would be needed to replace the energy cut in fossil fuels and maintain the same energy amount, for a few selected countries with big CO2 emissions?

Table 1. Number of Ouarzazate plants necessary in 2030 for COP21's GOAL II: Global scene (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 |
| Canada | 30 | 230 | 300 |
| Mexico | 25 | 120 | 200 |
| Australia | 26 – 28 | 130 | 190 |
| Russia | none[iii] | 0 | 940 |
| World | N/A | N/A | 16000 |

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If countries rely to some extent upon wind or geo-thermal power or atomic power, the number in Table 1 will be reduced. The key question is: Can so much solar power be constructed in some 10 years? Thus, the COP23 should decide to embark upon an energy transformation of this colossal size.

Solar power investments will have to take many things into account: energy mix, climate, access to land, energy storage facilities, etc. They are preferable to nuclear power, which pushes the pollution problem into the distant future with other kinds of dangers. Wind power is accused to being detrimental to bird life, like in Israel's Golan Heights. Geo-thermal power comes from volcanic power and sites. Let us look at the American scene in Table 2.

Table 2. Number of Ouarzazate plants necessary in 2030 for COP21's GOAL II: American scene (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 |

It has been researched has much a climate of Canadian type impacts upon solar power efficiency. In any case, Canada will need backs ups for its many solar power parks, like gas power stations. Mexico has a very favourable situation for solar power, but will need financing from the Super Fund, promised in COP21 Treaty. In Latin America, solar power is the future, especially as water shortages may be expected. Chile can manage their quota, but Argentine needs the Super Fund for sure. Table 3 has the data for the African scene with a few key countries, poor or medium income.

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Table 3.Number of Ouarzazate plants necessary in 2030 for COP21's GOAL II: African scene (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[iv] | 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 |

Since Africa is poor, it does not use much energy like fossil fuels, except Maghreb as well as Egypt plus much polluting South Africa, which countries must make the energy transition as quickly as possible. The rest of Africa uses either wood coal, leading to deforestation, or water power. They can increase solar power without problems when helped financially.

Table 4 shows the number of huge solar parks necessary for a few Asian countries. The numbers are staggering, but can be fulfilled, if turned into the number ONE priority. Some of the poor nations need external financing and technical assistance.

Table 4. Number of Ouarzazate plants necessary in 2030 for COP21's GOAL II. Asian scene (Note: Average of 250 - 300 days of sunshine was used for Kazakhstan, 300 - 350 days of sunshine per year for the others).

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| Nation | Co2 reduction pledge / % of 2005 emissions | Number of gigantic solar plants needed (Ouarzazate) | Gigantic plants needed for 40 % reduction |
|---|---|---|---|
| Saudi Arabia | 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 |

Finally, we come to the European scene (Table 5), where also great investments are needed, especially as nuclear power is reduced significantly and electrical cars will replace petrol ones, to a large extent.

Table 5. Number of Ouarzazate plants necessary in 2030 for COP21's GOAL II: European scene (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[v] | 550 | 450 |
| France | 37[v] | 210 | 220 |
| Italy | 35[v] | 230 | 270 |
| Sweden | 42[v] | 30 | 30 |

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

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**GRANDE SCALE POLICY IMPLEMENTATION: Management Tasks**

Although each country is responsible for the execution of its special plan of decarbonisation, international governance faces several challenges in this process towards complete decarbonisation by 2075, globally speaking. It must make sure that:

a) There is no reneging;
b) Funding is available for countries that need assistance;
c) Best available technologies are spread to all government;
d) Oversight and control is made yearly;

**a) Defection**

For all forms of international governance applies the famous Hobbes' dictum, anticipating by several hundred years the arrival of the theory of the PD game in the social sciences:

And covenants, without the sword, are but words and of no strength to secure a man at all. Therefore, notwithstanding the laws of nature (which every one hath then kept, when he has the will to keep them, when he can do it safely), if there be no power erected, or not great enough for our security, every man will and may lawfully rely on his own strength and art for caution against all other men. T. Hobbes, Leviathan (1651), Chapter XVII

As long as withdrawal from a Treaty does not itself violate basic principles of Public International Law, there is no constraining mechanism available. Thus, the US can now act as a double free rider: no imposed decarbonisation from outside, as well as no obligation to pay into the planned Super Fund. The COP21 Agreement offers a multitude of possibilities to cheat, i.e. renege, especially as it is a huge and long term project with economic implications for both poor and rich countries.

Decarbonisation is nothing but an Ocean PD game, where the players are the signatories to a common pool regime (CPR) (Ostrom, 1990), instructed to handle the greatest externality in economic history (Stern, 2007). COP21 is large scale collective action, which is always vulnerable for free riding. Defection can occur immediately, as with the US, or at any stage on the long road to full decarbonisation. Since defection is the sub game perfect Nash equilibrium in a finitely repeated PD game, selective incentives must be employed to hold the CPR together – the Super Fund, already anticipated by Sterm (2007). Defection may take several forms besides exit:

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a) Refusal to decarbonize
b) Delays with elimination of coal
c) Closing down atomic power for gas
d) Continued use of wood coal
e) Refusal to contribute to the Super Fund.
f) Misinformation about accomplishments of decarbonisation.

**Super Fund**

The promise of 100 billion $ per year from 2020 was indeed a spectacular set of selective incentives for poor countries and emerging economies to stay in this global coalition that involves both costs of closing down facilities and costs of investing in renewables. Although there is some forms of support already in place for decarbonisation, the Super Fund is something of an entirely different order. How to fund? How to manage? Oversight and control! Links with the global funds and donars?

**Best Technology Transfer**

The technological development is quick in the energy sector with new products forthcoming all the time and prices keep falling almost invariably. For instance, solar power panels are now available I large quantities at much lower costs. Developments in nuclear energy have made these reactors much safer and cheaper. Finally, also wind- and geo-thermal power has reduced pricing. But technological advances must be communicated where they are needed, which is why the UNFCCC must develop consulting competences.

The UNFCCC may be asked to give advice to a government about its country strategies. For example, Brazil should be told that its plan for 30-35 dams in the Amazons is not vise, because the future water shortage in the Andes. The best strategy for Brazil is the solar power plants, type Ouarzazate. For South Asia also, lots of solar power must be better than giant hydro power projects. Geo-thermal power installations are highly suitable for countries with volcanos. The proposal by the Asian Development Bank to engage in massive CO2 capture or sequestration should be rejected entirely by the UNFCCC secretariat.

Moreover, improvement in batteries will play a major role for the transition an economy based upon renewable power sources and electrical vehicles.

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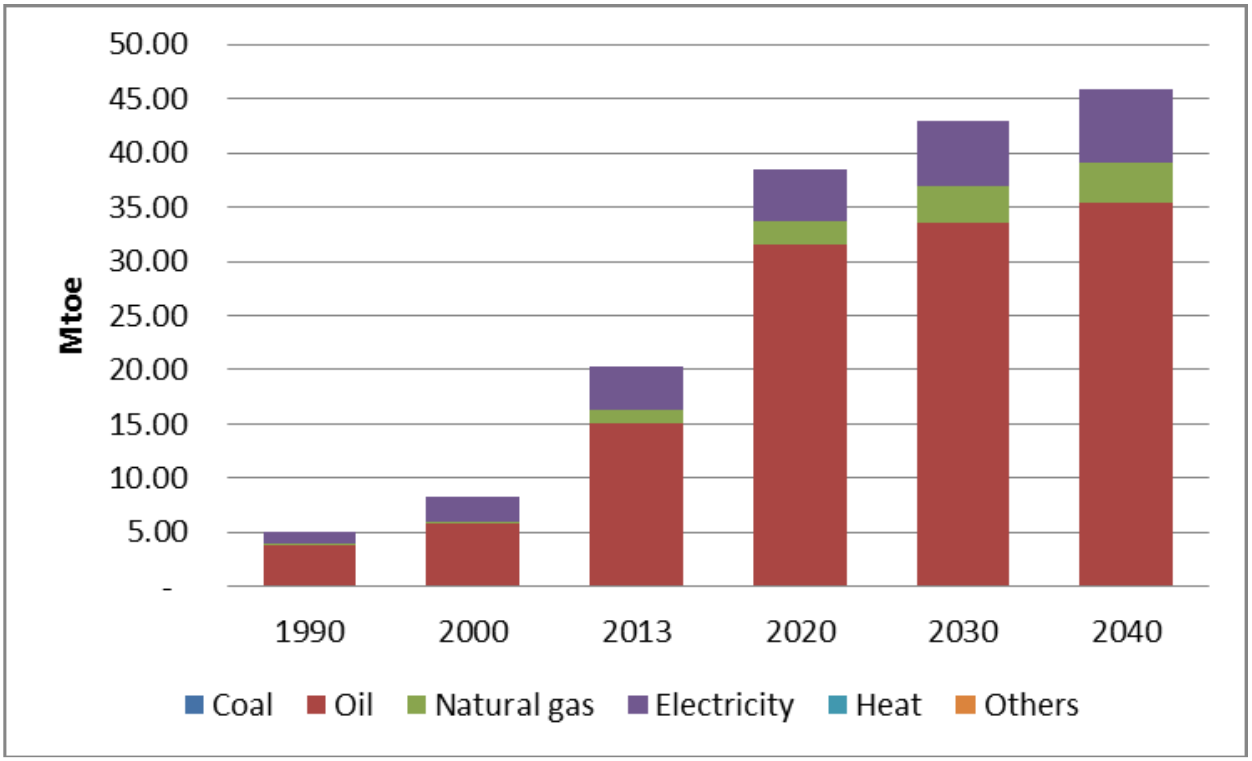
**Oversight**

Governments understate problems and setbacks, while exaggerating achievements and successes. To arrive at real debarbonisation, the emissions from the members of the CPR must be continuously monitored. Thus, China states that it is closing down cool plants, but speaks little about the planning for enormous infra structure investments and the increases in vehicles, engine sizes and air traffic. Likewise, Singapore praises itself for already being a GREEN city with lots of renewables. But cold figures about energy consumption tell a different story**.**

**FIGURE 5.**Energy mix in Singapore 2015 (BAU = Business-as-Usual scenario; Mtoe = million tons of oil equivalent)




Singapore has to invest much more in renewables to comply with GOAL II in the COP21 Treaty. Does it possess land enough for large solar power parks? Japan is in dire straits, because its nuclear program has been cut back. What to use except imports of gas and oil?

The temptation to renege a little bit by misinformation must be considerable for countries that are totally dependent upon fossil fuels. See Figure 2 for Kazakhstan (oil, coal and gas), Figure 3 for Egypt (gas and oil) and Figure 4 for Nigeria (traditional renewables).

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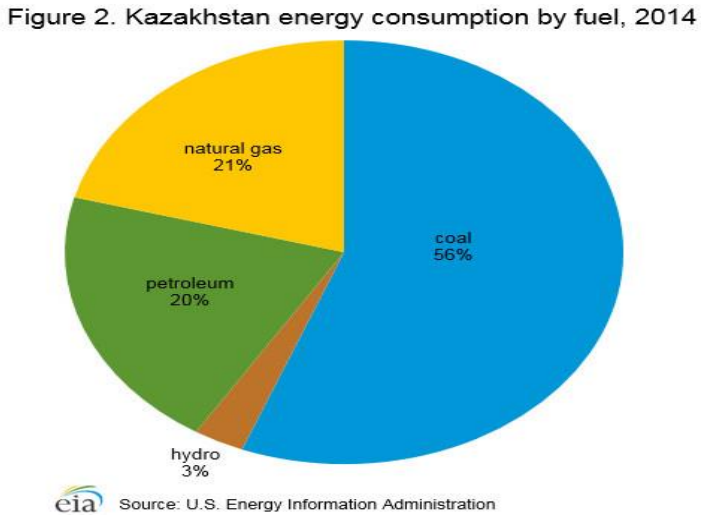
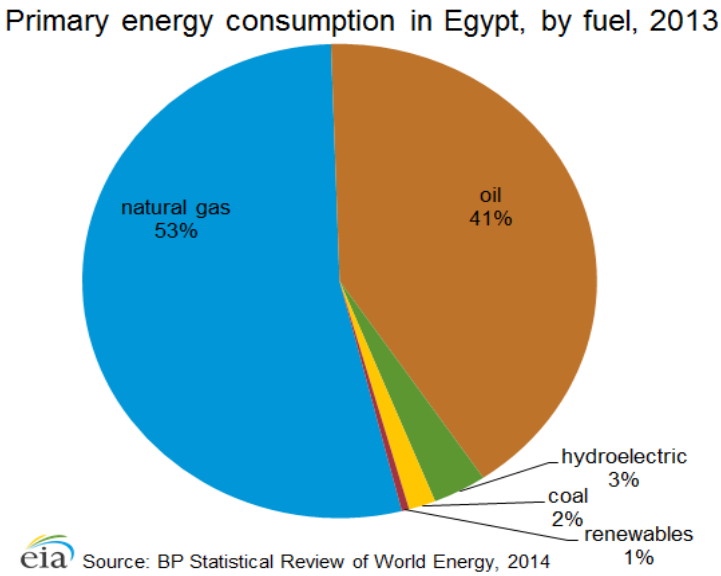
**FIGURE 6. Kazakhstan's energy mix**




Will Kazakhstan with its Soviet legacy of lying with facts report correctly on the huge energy transformation necessary? Consider Egypt experimenting with wind power but lacking the resources to reduce its gas and oil dependency?

**FIGURE 7.Egypt's energy mix**



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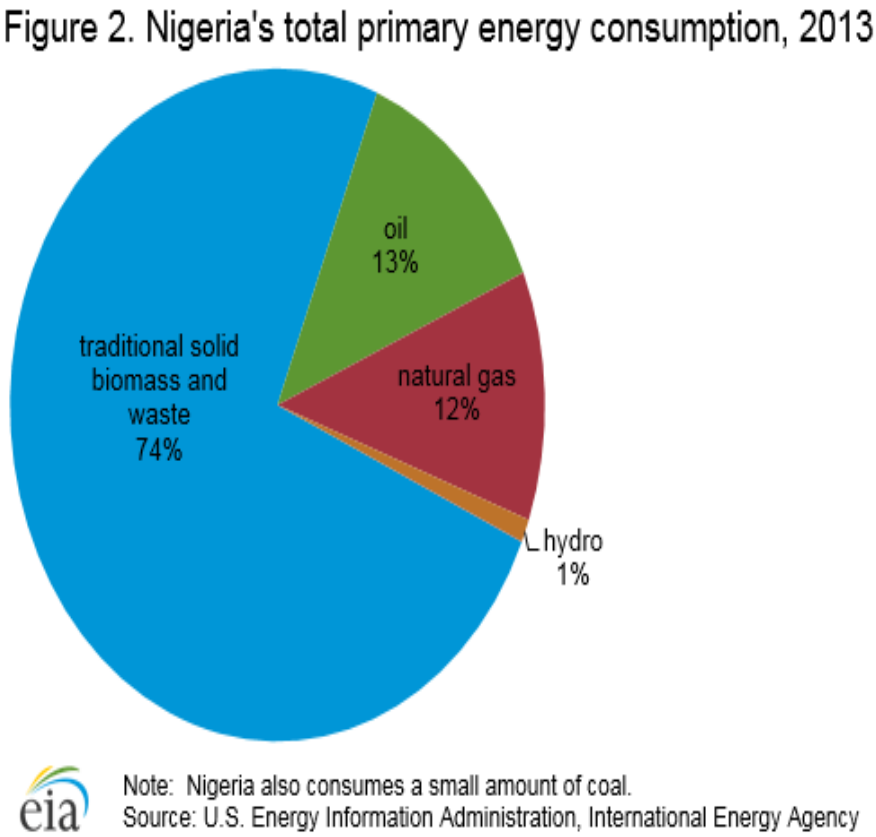
Egypt imports more and more oil, but it has to move into the solar energy option radically. Look now at oil giant Nigeria, which has an entirely different energy situation. Being very poor, Nigeria rlesupomwood coal. Can it change to solar power by itself? Probably not.

**FIGURE 8.Nigeria's energy mix**




Some countries have a much more favourable energy situation – like Uruguay. Look at Sweden for instance, however creating a problem – Figure 9. When the country closes its nuclear power stations, it will face difficulties to decarbonise, although it boats 100 per cent decarbonisation in the near future.

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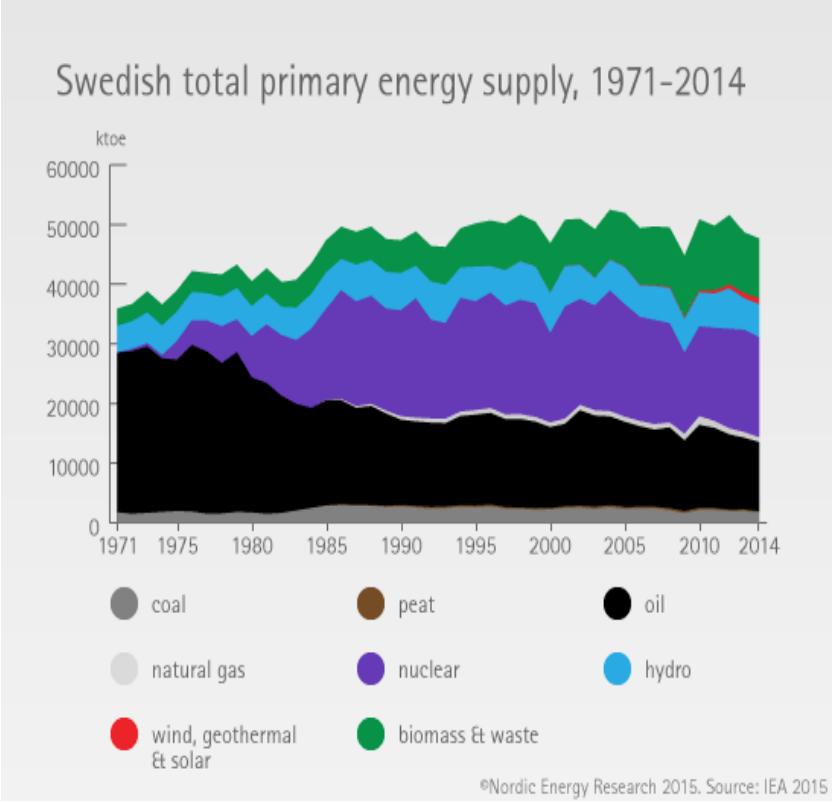
**FIGURE 9.Sweden's energy mix**




Actually, also France and Germany will attempt to reduce or eliminate atomic power (Figure10), while also cutting fossil fuels according to GOAL II by the COP21 Agreement. Perhaps impossible?!

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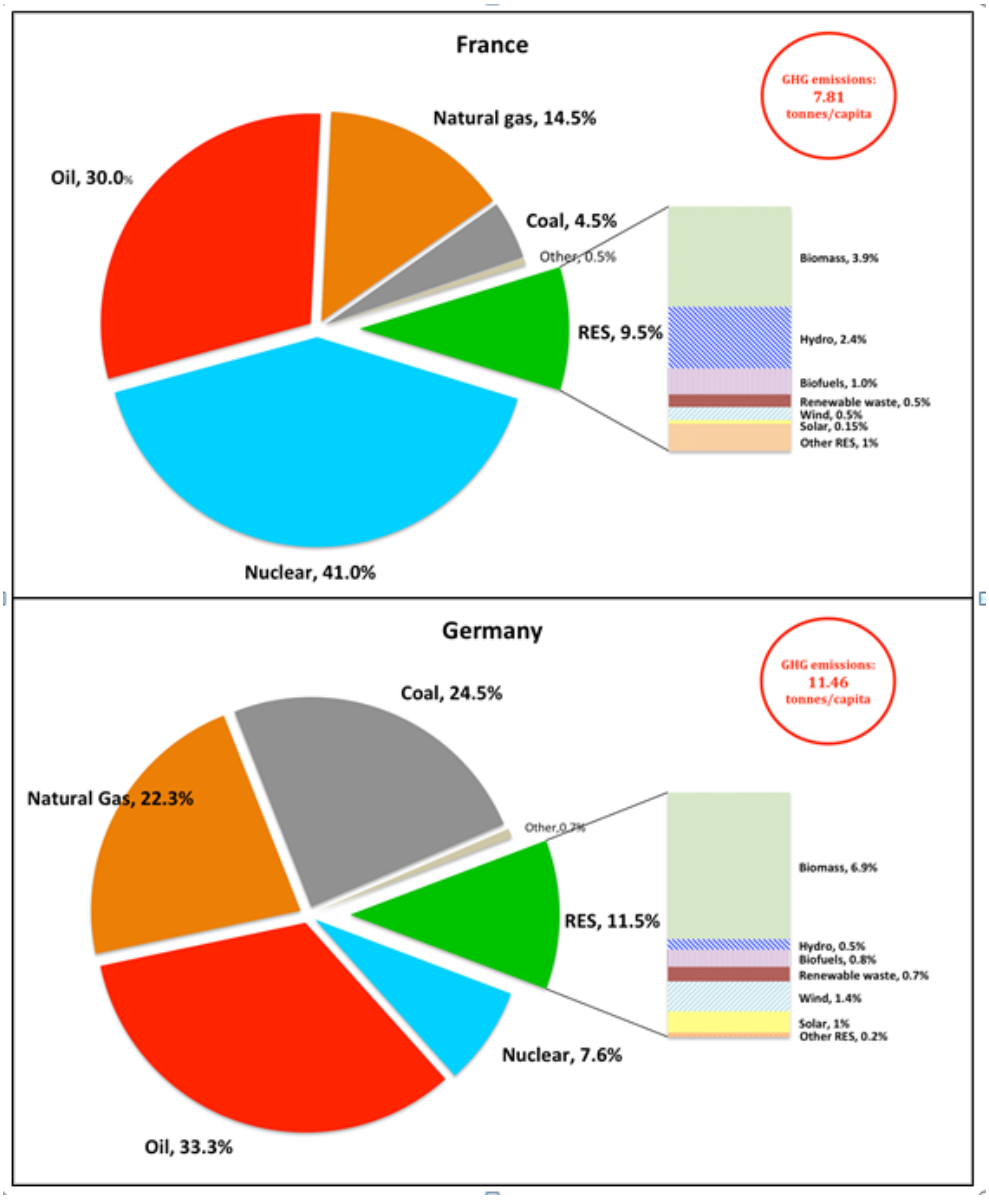
**FIGURE 10.Energymix Germany and France**




Source:

http://blog.iass-potsdam.de/2015/05/energy-transition-france-following-in-germanys-footsteps/

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## CONCLUSION

The COP23 meeting in the autumn is as vital as the COP21 was. So many issues have to be clarified. And the whole process of implementing the COP21 Treaty must get started. The evidence now indicated sharply growing methane emissions, which are NOT taken into account in calculations of temperature rise.

It is sad to establish that climate change remains not really politically relevant in domestic politics, although more and more feared by the ordinary citizen. Myopia has always been the mark of politics and what could happen in 10 or 20 years is not of immediate concern. The dire warming of Hawking – global warming turning irrevocable –is rejected vehemently by the climate change opponents, without explaining why or accounting for ongoing climate change damages.

The solution is giant solar power parks of Quarzazate size in combination with electrical vehicles. Stop all coal now.

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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