

クリーンテック・ウオッチャー 17

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Stop doing the CBI's bidding,

CBI(英国産業連合会)への機嫌取りをやめよう

and we could be fossil fuel free in 20 years

そして、20年以内に、我々は化石燃料から自由になれるだろう

Prospects for renewable power are promising.

再生可能なエネルギーへの見通しは有望である。

But it means nothing

しかし、それは何も意味しない

if the public interest is drowned by corporate power

公共の利益が企業権力によって飲み込まれてしまうなら

George Monbiot

ジョージ・モンビオット

Tuesday July 3, 2007

2007年7月3日火曜日

The Guardian

ガーディアン

01.

Reading a scientific paper on the train this weekend,

今週末、列車の中で科学レポートを読んでいた、

I **found**, to my amazement,

驚いたことに、私は見つけた

that

my hands were shaking.

私の手が震えていることを。

02.

This *has never happened*

to me before,

このようなことは、これまでに、私には起こらなかった、

but nor **have I**

ever read

anything like it.

しかし、私はこれまでに、それに似たようなものは読んだことはなかった。

03.

Published by a team led by James Hansen at Nasa,

NASAのジェームズ・ハンセンによって率いられたチームによって発表された、

it **suggests**

that

それは示唆する

the grim reports

issued by the Intergovernmental Panel on Climate Change

「気候異変に関する政府間パネル」によって発行された憂鬱なレポートは

could be absurdly optimistic.

ばかばかしいほど楽観的であることを。

04.

The IPCC

IPCC は

predicts

予測する

that

sea levels *could rise* by as much as 59cm this century.

海面が今世紀最大 59cm も上昇するであろうと。

05.

Hansen's paper

ハンセンのレポートは

argues

論議する

that

the slow melting of ice sheets the panel expects

パネル(IPCC)が予測する氷床のゆっくりした溶融は

doesn't fit the data.

データに合わない(と)。

06.

The geological record

地質記録は

suggests

示唆する

that

ice at the poles

南北両極の氷は

does not melt in a gradual and linear fashion,
一線の上を段階的に溶けていくのではなく
but flips suddenly from one state to another.
一つの状態からもう一つの状態まで突然飛び移る(ことを)。

07.

When

temperatures

温度が

increased

to between two and three degrees above today's level

3.5 million years ago,

350万年前に、今日のレベルより2度から3度上昇した時

sea levels

海面は

rose not by 59cm but by 25 metres.

59cm ではなく、25 メートル上昇した。

08.

The ice

氷は、

responded immediately

to changes in temperature.

温度の変化にすぐに反応した。

09.

We

我々は、

now have

今や有している

a pretty good **idea** of why ice sheets collapse.

なぜ氷床が崩れるのかについてかなり良質の考察を。

10.

The buttresses

that prevent them from sliding into the sea

それらが海にすべり込むことを防いでいる支えは

break up;

壊れる;

meltwater

融雪氷水は、

trickles down

to their base

その(氷の)基底部に滴り落ち

causing them suddenly to slip;

その氷が突然滑り出す原因となっている;

and **pools** of water

そして、水溜りが

form on the surface,

上面に形成され

making the ice darker

氷をもっと暗くして

so that

it absorbs more heat.

それによって、その氷はより多くの熱を吸収する。

11.

These processes

これらのプロセスは、

are already taking place

in Greenland and west Antarctica.

グリーンランドと西南極大陸ですでに起こっている。

12.

Rather than taking thousands of years to melt,

溶けるには数千年もかかるどころか

as the IPCC predicts,

IPCC が予測して予想しているように、

Hansen and his team

ハンセンと彼のチームは

find it "implausible"

それが「信じがたい」ことを見つけた

that

すなわち

the expected warming before 2100

2100 年までに予想される温暖化が

"would permit a west Antarctic ice sheet of present size

to survive even for a century".

「西南極大陸の氷床が、現在のサイズのまま一世紀の間も生き残ることを
許す」、などということが。

13.

As well as drowning most of the world's centres of population,

世界の人口の諸センター大部分をあふれさせるのと同様に
a sudden disintegration

突然の崩壊は

could lead

to much higher rises in global temperature,

地球の温度がさらに高くなることを導くだろう

because

なぜならば

less ice

より少ない氷は

means

意味する

less heat reflected back into space.

宇宙空間へ反射される熱がより少なくなることを。

14.

The new paper

新しいレポートは

suggests

示唆する

that

the temperature

could therefore be twice as sensitive to rising greenhouse gases
than the IPCC assumes.

温度は、それゆえ、上昇する温室ガスに対して、IPCC が見積もるよりも、
二倍も敏感である(ことを)。

15.

"Civilisation

developed,"

「文明は発達した」、

Hansen writes,

ハンセンは書いている、

"during a period of unusual climate stability,

「前例が無いほど気候が安定していた期間に、

the Holocene,

(すなわち)完新世、

now almost 12,000 years in duration.

現在までほぼ 12,000 年続いている。

16.

That **period**

is about

to end."

その期間は今や終わろうとしている。」

17.

I **looked up**

from the paper,

私はレポートから顔を上げた、

almost expecting to see crowds stampeding through the streets.

群集が通りを逃げ散っている姿を見ることをほとんど予測しながら。

18.

I **saw** **people**

私は 見た 人々を

chatting outside a riverside pub.

川沿いのパブの外で談笑しているのを。

19.

The other **passengers** on the train

列車の中の他の乗客は、

snoozed

over their newspapers

彼らの新聞の上でうたた寝していた

or played

on their mobile phones.

あるいは彼らの携帯電話をいじっていた。

20.

Unaware of the causes of our good fortune,

我々の幸運の原因に気がつかず、

blissfully detached from their likely termination,

ありうる終末から幸せにも切り離されて、

we drift into catastrophe.

我々は大災害に向けて流されていく。

21.

Or

we are led there.

または、我々はそこに導かれている。

22.

A good **source**

ある確かな(情報)源が、

tells me

話す 私に

that

the British government

英国政府は

is well aware

十分に気がついていると

that

すなわち

its target for cutting carbon emissions - by 2050 -

2050年までに、カーボン(炭素)排出を 60%削減するというその目標は

is too little too late,

あまりにも小さく、あまりに遅い、

but that

しかし

it will go no further for one reason:

それ(政府)は一つの理由のためにもうそれ以上進まないだろう:

it fears

それ(政府)は、恐れる

losing the support of the Confederation of British Industry.

「英国産業連合」の支持を失うことを。

23.

Why this body *is allowed to keep holding a gun to our heads*

なぜにこの団体は我々の頭に拳銃を突きつけたままになっていることが許されているのかは

has never been explained,

これまで説明されてこなかった、

but

Gordon Brown

しかし、ゴードン・ブラウンが

has just appointed

任命したばかりである

Digby Jones, its former director-general,

その団体の前の総裁であるディグビー・ジョーンズを

as a minister in the department responsible for energy policy.

エネルギー政策に責任がある部門の大臣に。

24.

I don't remember

voting for him.

私は、彼に投票するのを忘れていた。

25.

There

could **be**

no clearer **signal**

これ以上明瞭な印はありえないだろう

that

the public interest

公共の利益が

is being drowned by corporate power.

企業の力によって飲み込まれているという。

26.

The government's energy **programme**,

政府のエネルギー・プログラムは、

partly as a result,

部分的にその結果として、

is characterised

by a complete absence of vision.

ビジョンの完全な欠如ということで特徴づけられている。

27.

You can see

this

most clearly

あなたは最も明らかにそのことを見ることができる

when

you examine

あなたが調べるとき

its plans for renewables.

再生可能(エネルギー)に関するその計画を。

28.

The EU

EUは

has set

設定した

a **target**

目標を

for 20% of all energy in the member states

加盟国において、全てのエネルギーの20%は

to come from renewable sources by 2020.

2020年までに、再生可能資源から来るべきであるとの。

29.

This in itself

これはそれ自体

is pathetic.

感動的である。

30.

But

the government

しかし、政府は

refuses

拒否している

to adopt it:

それを採用することを：

instead

その代わりに、

it proposes

それは提唱する

that

20% of our electricity (just part of our total energy use)

我々の電気(我々の全エネルギー使用の一部)の20%は

should come from renewable power by that date.

その日付までに、再生可能なエネルギーから来なければならないと。

31.

Even this

is not a target,

これは目標でさえない、

just an "aspiration",

「願望」にすぎない

and we

そして、我々は

are on course to miss it.

それを逃すコースの上にいる。

32.

Worse still,

更に悪いことに、

the government

政府は

has no idea

考えを何も持っていない

what happens after that.

何がその後に生じるのか。

33.

Last week

先週、

I asked

私は 尋ねた

whether

it had commissioned any research to discover

発見するための調査研究委託があったのかどうか

how much more electricity

we could generate from renewable sources.

再生可能資源から我々はどれくらい多くの発電が可能なのか。

34.

It has not.

それは、なされていなかった。

35.

It's a critical question,

それはクリティカルな質問である

whose answer - if its results were applied globally -

その答えはーもしその実績がグローバルに適用されるならば

could determine

決定することになろう

whether or not

the planetary "albedo flip" that Hansen predicts

takes place.

ハンセンが予測する地球の「アルベド・フリップ(反射係数はじき)」が起こるかどうかを。

36.

There

has been

remarkably little investigation of this issue.

この問題に関する驚くほど少しの調査しかそこには無かった。

37.

Until recently

最近までは、

I **guessed**

私は 思っていた

that

the maximum contribution from renewables

would be something like 50%:

再生可能(エネルギー)からの最大の貢献は

だいたい50%ぐらいだろうと:

beyond that point

その点を越えると、

the **difficulties** of storing electricity and balancing the grid

電気を保存し、電力網のバランスを取る難しさは

could become overwhelming.

圧倒的になって来るだろう。

38.

But

three papers

しかし、三つの論文が

now suggest

いまや示唆する

that

we *could* go much further.

我々はさらに前へ進むことができるであろうことを。

39.

Last year,

昨年、

the German **government**

ドイツ政府は、

published

公表した

a **study** of the effects

of linking the electricity networks of all the countries in Europe

ヨーロッパ全ての国の電力ネットワークを結ぶ効果に関する研究論文を

and connecting them to north Africa and Iceland

with high-voltage direct-current cables.

そしてそれらを北アフリカとアイスランドに高圧直流ケーブルでつなぐ(効果に関する研究論文を)。

40.

This would open up

これは、開けることになるだろう

a much greater variety of renewable power **sources**.

再生可能なエネルギー資源のさらに大きく広がる多様性を。

41.

Every country in the network

ネットワークの中のあらゆる国は、

*would then **be able***

to rely on stable and predictable supplies from elsewhere:

そこで、どこか他の所から、安定しかつ予見できる供給に頼ることができる:

hydroelectricity in Scandinavia and the Alps,

スカンジナビアとアルプスの水力発電、

geothermal energy in Iceland

アイスランドの地熱

and vast solar thermal farms in the Sahara.

および、サハラ砂漠の広大な太陽熱発電所。

42.

By spreading the demand across a much wider network,

さらに広いネットワークの向こうに需要を広げることによって、

it suggests

それは示唆する

that

80% of Europe's electricity

ヨーロッパの電気の80%は

could be produced from renewable power

再生可能エネルギーから生産されうることを

without any greater risk of blackouts or flickers.

停電または点滅という大きなリスクを犯すことなく。

43.

At about the same time,

だいたい同じ頃に、

Mark Barrett, of University College London,

ロンドン大学カレッジのマーク・バレットは、

published

発表した

a preliminary **study**

暫定の研究を

looking mainly at ways

主に方法を考察している

of altering the pattern of demand for electricity

電力への要求のパターンを変える

to match the variable supply from wind and waves and tidal power.

風と波と潮力からの種々の供給に合致させるための。

44.

At about twice the current price,

現在の(電気の)価格が二倍になれば、

he **found**

彼は 見つけた

that

we *might be able to* produce

われわれは生産することができるかもしれない

as much as 95% of our electricity from renewable sources

我々の電気の95%までも、再生可能資源から

without causing interruptions in the power supply.

電力供給の途絶を引き起こすことなく。

45.

Now

a new **study** by the Centre for Alternative Technology

さて、「代替技術のためのセンター」による新しい研究は、

takes

this even further.

これさえもさらに超える。

46.

It ***is due***

to be published next week,

それは来週出版されることになっている、

but

I ***have been allowed***

a preview.

しかし、私は、前もって見ることを許された。

47.

It ***is remarkable***

in two respects:

それは、二つの点で注目値する:

it **suggests**

それは示唆する

that

by 2027

we could produce 100% of our electricity

2027 年までに、

我々は、我々の電気の 100%を生産することができるだろう

without the use of fossil fuels or nuclear power,

化石燃料または原子力を使わずに、

and **that**

そして、

we *could do so*

我々は達成できるだろう

while almost tripling its supply:

その供給をほとんど3倍にしながら:

our heating **systems** (using electricity to drive heat pumps)

我々の暖房方式(ヒートポンプを駆動するために電気を使う)

and our transport **systems**

および我々の輸送システムは、

could be mostly powered

by it.

それによって大部分は動かされるだろう。

48.

It *relies on*

a great expansion of electricity storage:

それは、電力貯蔵の大きな拡大に頼る:

building new hydroelectric reservoirs

新しい水力発電貯水池を造ること

into which water can be pumped

when electricity is abundant,

電気が豊富なとき、その中に水をポンプで注ぐことが可能な

constructing giant vanadium flow batteries

巨大なバナジウム・フロー・バッテリーを造ること

and **linking** electric cars up to the grid when they are parked,

そして、駐車中の電気自動車に電力網とリンクすること、

using their batteries to meet fluctuations in demand.

需要の変動に対処するために、その自動車のバッテリーを利用しながら。

49.

It contains

それは含む

some optimistic technical assumptions,
いくつかの楽観的な技術的な仮定を、
but also a very pessimistic one:
しかし、また、非常に悲観的なものを:
that
the UK *relies entirely on* its own energy supplies.
英国は自分自身のエネルギー供給に全て頼る。

50.

If

the German proposal

ドイツの提案が

were

to be combined with these ideas,

これらの考えと混ぜ合わせられるならば、

we could begin

to see

我々は見始めることができるかもしれない

how

we might reliably move

towards a world without fossil fuels.

我々がどのように、化石燃料なしでの世界へ向けて
確実に進んでいくかを。

51.

If

Hansen

is correct,

もしハンセンが正しいならば、

to avert the meltdown

that brings the Holocene to an end

完新世を終わりに至らせるメルトダウンを避けるためには、

we require

我々は必要とする

a sort of political "**albedo flip**".

一種の政治的な「アルベド・フリップ」を。

52.

The government

政府は、

must immediately commission

すぐに委嘱すべきである

studies to discover

発見するための研究を

how much of our energy

could be produced without fossil fuels,

我々のエネルギーのどれだけが、化石燃料なしで、生産されうるかの、

set that as its target

それを目標としてセットすべきであり、

and then turn

the economy round to meet it.

それから、それに合致するように、経済の方向を向けるべきである。

53.

But

a power shift like this

しかし、このようなパワー・シフトは

cannot take place

without a power shift of another kind:

もう一種類のパワー・シフトなしには起こりえない:

we need

我々は、必要とする

a government

政府を

which fears planetary meltdown more than it fears the CBI.

CBIを恐れるよりは、地球のメルトダウンの方を恐れる。

Stop doing the CBI's bidding, and we could be fossil fuel free in 20 years

Prospects for renewable power are promising.

But it means nothing if the public interest is drowned by corporate power

George Monbiot

Tuesday July 3, 2007

The Guardian

Reading a scientific paper on the train this weekend, I found, to my amazement, that my hands were shaking. This has never happened to me before, but nor have I ever read anything like it. Published by a team led by James Hansen at Nasa, it suggests that the grim reports issued by the Intergovernmental Panel on Climate Change could be absurdly optimistic.

The IPCC predicts that sea levels could rise by as much as 59cm this century. Hansen's paper argues that the slow melting of ice sheets the panel expects doesn't fit the data. The geological record suggests that ice at the poles does not melt in a gradual and linear fashion, but flips suddenly from one state to another. When temperatures increased to between two and three degrees above today's level 3.5 million years ago, sea levels rose not by 59cm but by 25 metres. The ice responded immediately to changes in temperature.

We now have a pretty good idea of why ice sheets collapse. The buttresses that prevent them from sliding into the sea break up; meltwater trickles down to their base causing them suddenly to slip; and pools of water form on the surface, making the ice darker so that it absorbs more heat. These processes are already taking place in Greenland and west Antarctica.

Rather than taking thousands of years to melt, as the IPCC predicts, Hansen and his team find it "implausible" that the expected warming before 2100 "would permit a west Antarctic ice sheet of present size to survive even for a century". As well as drowning most of the world's centres of population, a sudden disintegration could lead to much higher rises in global temperature, because less ice means less heat reflected back into space. The new paper suggests that the temperature could therefore be twice as sensitive to rising greenhouse gases than the IPCC assumes. "Civilisation developed," Hansen writes, "during a period of unusual climate stability, the Holocene, now almost 12,000 years in duration. That period is about to end."

I looked up from the paper, almost expecting to see crowds stampeding through the streets. I saw people chatting outside a riverside pub. The other passengers on the train snoozed over their newspapers or played on their mobile phones. Unaware of the causes of our good fortune, blissfully detached from their likely termination, we drift into catastrophe.

Or we are led there. A good source tells me that the British government is well aware that its target for cutting carbon emissions - 60% by 2050 - is too little too late, but that it will go no further for one reason: it fears losing the support of the Confederation of British Industry. Why this body is allowed to keep holding a gun to our heads has never been explained, but Gordon Brown has just appointed Digby Jones, its former director-general, as a minister in the department responsible for energy policy. I don't remember voting for him. There could be no clearer signal that the public interest is being drowned by corporate power.

The government's energy programme, partly as a result, is characterised by a complete absence of vision. You can see this most clearly when you examine its plans for renewables. The EU has set a target for 20% of all energy in the member states to come from renewable sources by 2020. This in itself is pathetic. But the government refuses to adopt it: instead it proposes that 20% of our electricity (just part of our total energy use) should come from renewable power by that date. Even this is not a target, just an "aspiration", and we are on course to miss it. Worse still, the government has no idea what happens after that. Last week I asked whether it had commissioned any research to discover how much more electricity we could generate from renewable sources. It has not.

It's a critical question, whose answer - if its results were applied globally - could determine whether or not the planetary "albedo flip" that Hansen predicts takes place. There has been remarkably little investigation of this issue. Until recently I guessed that the maximum contribution from renewables would be something like 50%: beyond that point the difficulties of storing electricity and balancing the grid could become overwhelming. But three papers now suggest that we could go much further.

Last year, the German government published a study of the effects of linking the electricity networks of all the countries in Europe and connecting them to north Africa and Iceland with high-voltage direct-current cables. This would open up a

much greater variety of renewable power sources. Every country in the network would then be able to rely on stable and predictable supplies from elsewhere: hydroelectricity in Scandinavia and the Alps, geothermal energy in Iceland and vast solar thermal farms in the Sahara. By spreading the demand across a much wider network, it suggests that 80% of Europe's electricity could be produced from renewable power without any greater risk of blackouts or flickers.

At about the same time, Mark Barrett, of University College London, published a preliminary study looking mainly at ways of altering the pattern of demand for electricity to match the variable supply from wind and waves and tidal power. At about twice the current price, he found that we might be able to produce as much as 95% of our electricity from renewable sources without causing interruptions in the power supply.

Now a new study by the Centre for Alternative Technology takes this even further. It is due to be published next week, but I have been allowed a preview. It is remarkable in two respects: it suggests that by 2027 we could produce 100% of our electricity without the use of fossil fuels or nuclear power, and that we could do so while almost tripling its supply: our heating systems (using electricity to drive heat pumps) and our transport systems could be mostly powered by it.

It relies on a great expansion of electricity storage: building new hydroelectric reservoirs into which water can be pumped when electricity is abundant, constructing giant vanadium flow batteries and linking electric cars up to the grid when they are parked, using their batteries to meet fluctuations in demand. It contains some optimistic technical assumptions, but also a very pessimistic one: that the UK relies entirely on its own energy supplies. If the German proposal were to be combined with these ideas, we could begin to see how we might reliably move towards a world without fossil fuels.

If Hansen is correct, to avert the meltdown that brings the Holocene to an end we require a sort of political "albedo flip". The government must immediately commission studies to discover how much of our energy could be produced without fossil fuels, set that as its target and then turn the economy round to meet it. But a power shift like this cannot take place without a power shift of another kind: we need a government which fears planetary meltdown more than it fears the CBI.

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