

The road to ruin

Based on a presentation by
Stuart Young to a workshop at the
inaugural meeting of the
Scottish Rural Parliament in Oban on
6th November 2014

The road to ruin.

My name is Stuart Young. I am a committed opponent of windfarms, and former Chair of Caithness Windfarm Information Forum.

I am author of the report "Analysis of UK Wind Power Generation November 2008 to December 2010, sometimes known as the "John Muir Report".

Links

www.caithnesswindfarms.co.uk

http://www.jmt.org/assets/report_analysis%20uk%20wind_young.pdf



“National Grid Reveals plan to dim your lights”

You will have noticed a lot of headlines like this in the media recently about National Grid making plans for power cuts.

It is a disgrace that an advanced western nation can be in this situation.

How did we get to this situation? You are about to see a potted history of some of the main reasons.

1989/1990



Margaret Thatcher
sells off the
electricity industry



It was an act of political ideology.

The Central Electricity Generating Board and National Grid were responsible for the long-term planning, operation and engineering standards of the electricity industry. From this point on the electricity industry was operated for the benefit of shareholders, not for consumers.



1997

The Kyoto Protocol treaty was negotiated in December 1997 at the city of Kyoto, Japan and came into force February 16th, 2005.

In 1997 Tony Blair went to Kyoto and signed the treaty to reduce greenhouse gases, but not much happened for a time. It was well known that onshore wind was the only readily available technology that could be used, but if wind had been a good way to generate mass electricity, it would have happened a hundred years before then.

It got to the point that something had to be done to start working towards our committed targets.

2001

Large Combustion Plant Directive

Station	Generating capacity (MW)	Closure date
Grain	1300	December 2012
Kingsnorth	1940	December 2012
Didcot 'A'	1940	March 2013
Cockenzie	1152	March 2013
Fawley	990	March 2013
Ferrybridge	980 (half)	
Ironbridge	970	
Tilbury	1037	August 2013 ^[8]
Littlebrook	1245	
<i>Total</i>	11550	

In the meantime, in 2001 the EU issued the Large Combustion Plant Directive which required a timetable of closures for the most polluting fossil fuel generators. You can see the dates, 2012 and 2013. When Cockenzie closed in 2013, I bought myself a stand-by generator.

This is a clear directive. This is going to happen. It demands long-term planning.

But nobody did anything about replacing these very large reliable generators.

2002

Tony Blair introduces the Renewables Obligation



The Renewables Obligation (RO)

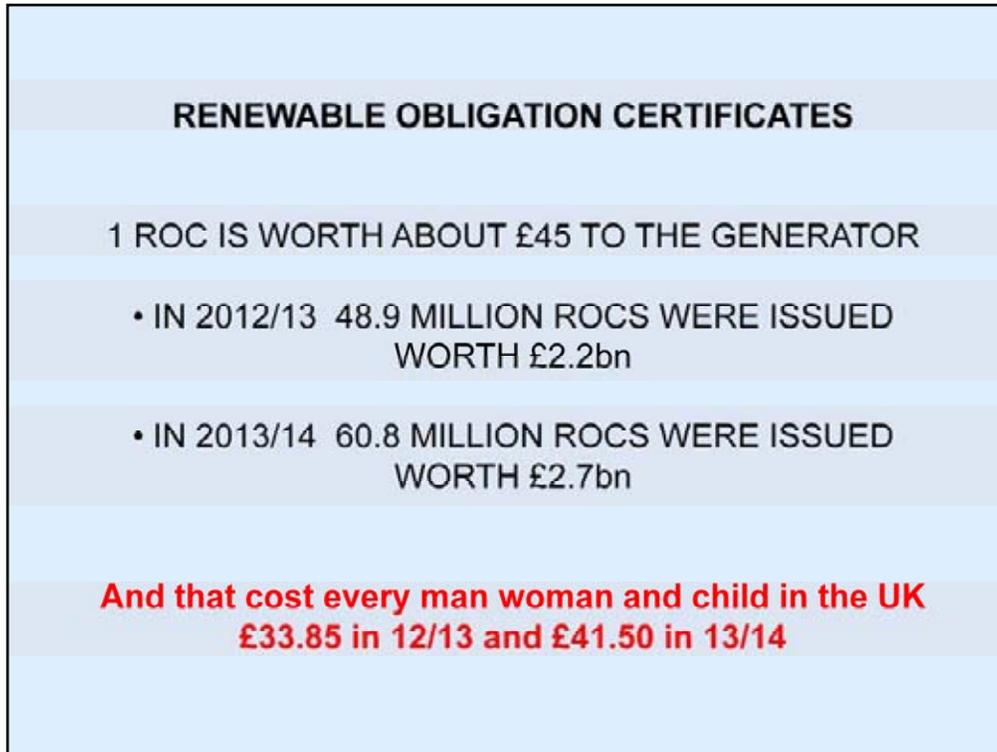
We introduced the Renewables Obligation (RO) in 2002 to provide incentives for the deployment of large-scale renewable electricity in the UK.

The RO requires licensed UK electricity suppliers to source a specified proportion of the electricity they provide to customers from eligible renewable sources.

This proportion (known as the 'obligation') is set each year and has increased annually.

So along comes the Renewables Obligation to provide incentives for the deployment of large scale renewable electricity in the UK.

It was quite disgraceful that the government didn't take on governance of the process to reduce greenhouse gases and instead handed the electricity industry a highly profitable sweetener to do it themselves.



It is worth looking at the numbers.

Very simply, for every MWh of electricity generated by renewables the generator gets a Renewable Obligation Certificate (ROC) worth about £45, on top of the electricity which at that time was worth about £35.

These are the recent numbers:

£2.2bn last year

£2.7bn this year

£3.2bn next year?

And rising.

This is what drives large windfarm development, it is absolutely nothing to do with any desire to save the planet.

The red text is what it has cost us in the last couple of years. You don't see it because only about half of that is in your electricity bill and oil and gas get the blame for it rising. The rest of it is in the loaf of bread you buy – everything you buy has the cost of ROCs in it.



2003

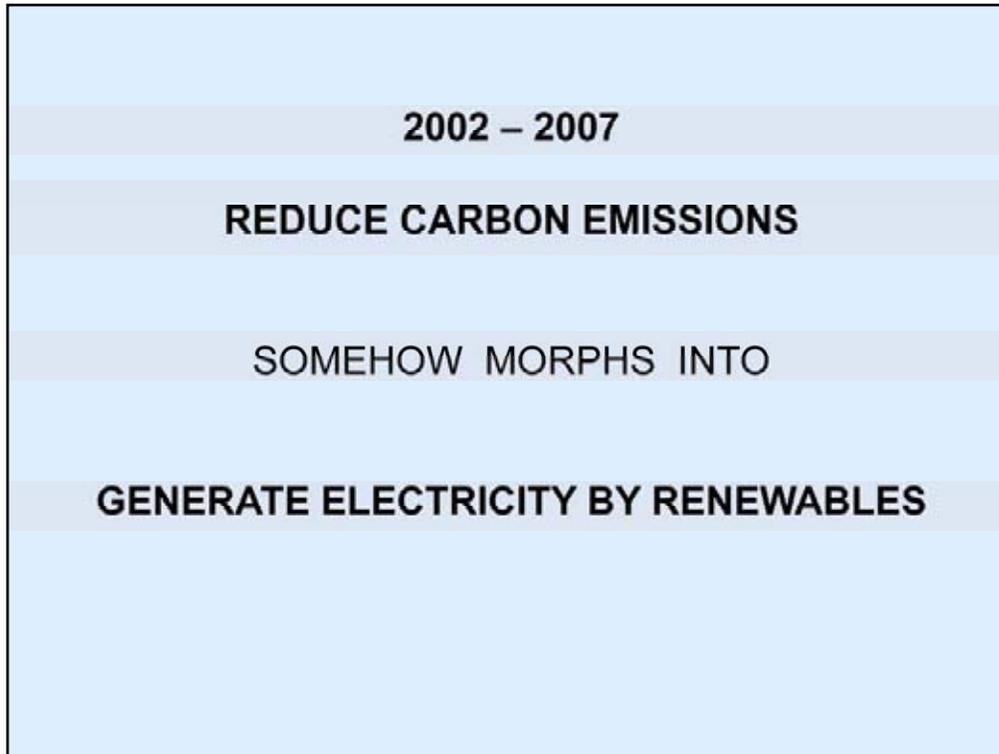
“We can generate twice as much”

Ross Finnie MSP, Environment Minister

As we go through this presentation you will see that some things happened that nobody could have predicted. They just weren't logical. But having happened, the consequences were totally predictable.

Ross Finnie's outburst committed Scotland to renewable generation targets twice the level of that required of the UK.

I remember on an ITV debate on wind energy, the presenter was pressing Ross Finnie on how he knew the targets were achievable and he answered "because the wind industry says so".



In this period, the imperative to reduce carbon emissions somehow morphed into an imperative to generate electricity by renewables.

We lost sight of the ball.

It just seemed to happen. But you can bet it was due to the power of the wind industry lobbying governments and the media.

2007
The Climate and Energy Package
20% reduction in EU greenhouse gas emissions
20% of EU energy consumption to be produced from renewable resources
20% improvement in the EU's energy efficiency

In 2007, one of Tony Blair's last acts as Prime Minister was to go to Europe and sign up to the Climate and Energy Package which committed us to (*reads out commitments*)

You will see that the word "energy" is highlighted. Blair's brief was to sign up to 20% of **electricity**.

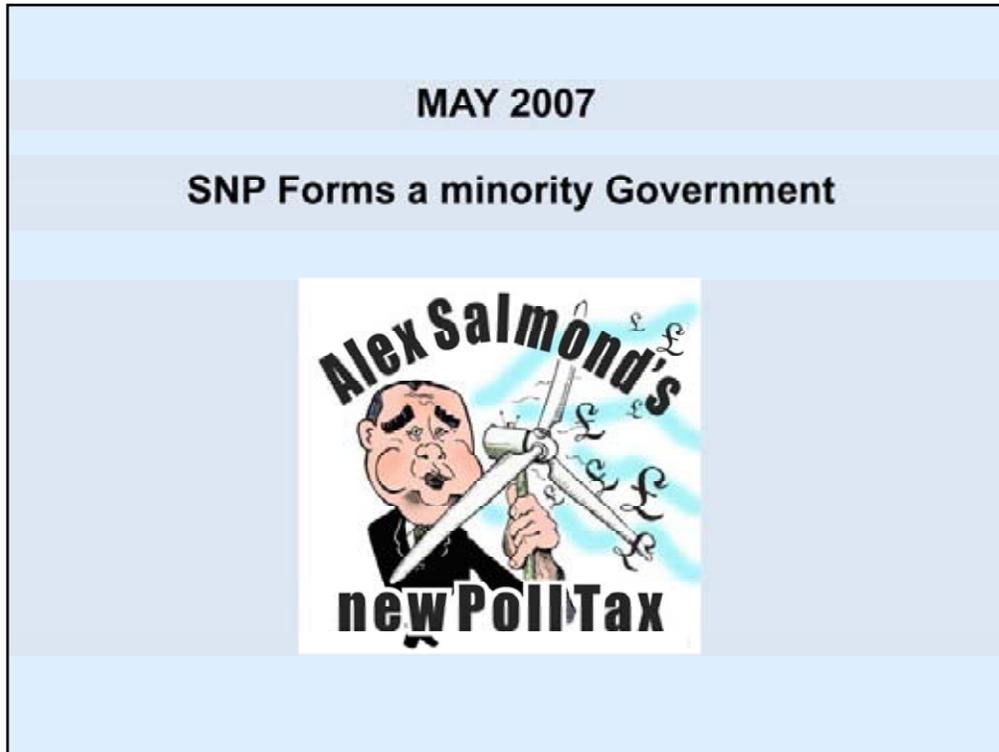
Somehow he persuaded his co-Ministers to go one better and sign up for **energy** – electricity is only about 40% of total energy so by that single unforeseeable act he committed us to an increase of 250% of what he was supposed have agreed.

And that is a legal and binding commitment which was never meant to happen.



So energy and electricity are not the same thing?

“Energy” and “electricity” are not the same.

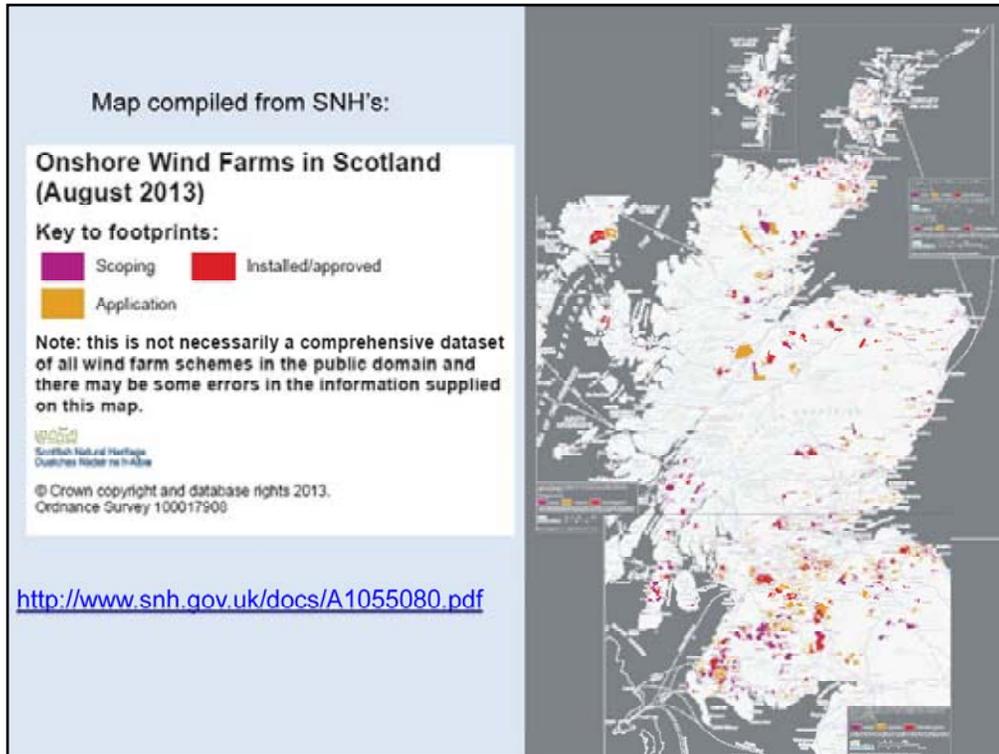


In May 2007 the SNP formed a minority government.

You will see that I am critical of all political parties, I do not single any out.

However Alex Salmond's obsession that renewables can bring the same bounty that North Sea gas did, coupled with his "Road to Damascus" vision of Scotland getting all of its electricity from renewables, is the root of much of our present and future troubles.

That "Road to Damascus" vision was subsequently changed to "the equivalent of" all Scotland's electricity needs when someone was brave enough to tell him it was impossible.



This is SNH's August 2013 Windfarm activity map pieced together and highlighted to make it stand out in a slide.

Each of the coloured blobs represents a windfarm drawn to scale (see key).

This map is already over a year out of date.

Since 2007,
the planning rules and guidance
which were put in place to protect us,
our Environment and our Heritage,
have been systematically eroded to
facilitate wind farm development

The proliferation of windfarms shown on the SNH map is the predictable consequence of Alex Salmond's obsession of getting 100% of Scotland's electricity from renewables, and it has been made possible because :

Since 2007, the planning rules and guidance which were put in place to protect us, our Environment, and our Heritage, have been systematically eroded to facilitate wind farm development.

For example, did you know that in spite of a requirement to consult local communities, if an entire village says it doesn't want a windfarm, that has no weight in the planning system? It cannot be considered by decision makers.

March 2007

**“Scottish Planning Policy 6
Communities**

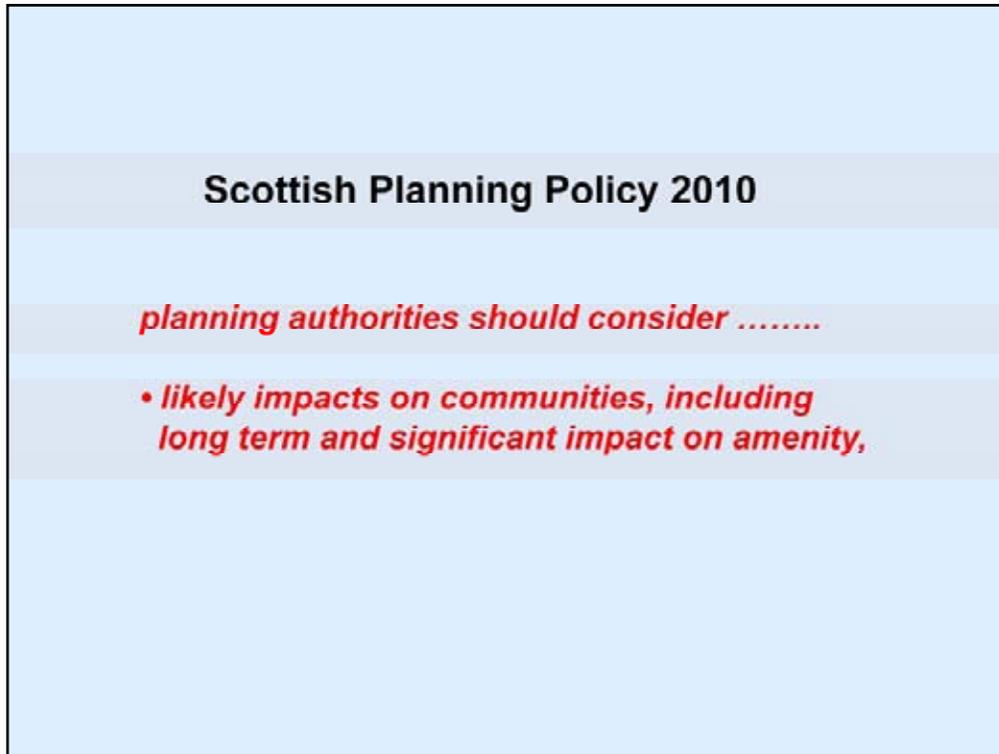
Broad criteria should be used to set out the **considerations** that developers should address in relation to local communities. **These should ensure that proposals are not permitted if they would have a significant long term detrimental impact on the amenity of people living nearby.”**

Some examples.

From March 2007, windfarm impact on communities was controlled by Scottish Planning Policy 6 and what it said was

(read out slide, emphasis on last highlighted sentence)

That is crystal clear. If it is going to do harm it doesn't get consented.



In 2010 Scottish Planning Policy was revised and, instead of that previous robust protection for people, now reads (*read out red highlighted text*)

There is only a requirement to consider amenity, not one to preserve it.

There is no protection in that phrase, and it has recently been watered down to a further extent -

Scottish Planning Policy 2014

1. **Considerations** will vary relative to the scale of the proposal and area characteristics but **are likely to include:**
 - **impacts on communities and individual dwellings, including visual impact, residential amenity, noise and shadow flicker;**
2. wind farms should nevertheless be sited and designed to ensure impacts are minimised and **to protect an acceptable level of amenity** for adjacent communities.

Scottish Planning Policy 2014.

(Read out 1.)

“likely to include” falls short of “shall include” and opens the door to **not** including consideration of impacts. The clause doesn’t obligate anyone to do anything to avoid them. The words of the policy are rich pickings for lawyers and Planning Professionals.

The second point is :-

“designed to ensure impacts are minimised and **to protect an acceptable level of amenity**”

What is “an acceptable level of amenity”? The big risk here is that the developer’s QCs will come along and say “look at that existing windfarm there. You can’t complain if it is no worse than that.”

For example:



This is Baillie Windfarm in Caithness. People live within half a kilometre of these turbines. Baillie was consented after PLI. The Reporter considered this to be acceptable as the targets were more important than the people.

The really criminal thing about Baillie is that it was consented in 2009 when Planning Policy still said

“These (considerations) should ensure that proposals are not permitted if they would have a significant long term detrimental impact on the amenity of people living nearby.”

The 2010 amendments ensured that the Scottish Government would not have to deal with this robust and humane clause again.



These organisations are there to protect us, and our heritage, and our culture.

But they all get their wages from the Scottish Government, and have been silenced by the Scottish Government in respect of windfarm development.

One very recent example – I am sure you have all heard that the Government is intent on protecting wild land. SNH conducted a process of identifying the wild land, put some proposals up, consulted on it. Before their final proposal was accepted, the Government told them to remove an area in the Monadhliadh Mountains from their wild land map, and then promptly consented the largest windfarm in the Highlands, Stronelaigr. 67 turbines.

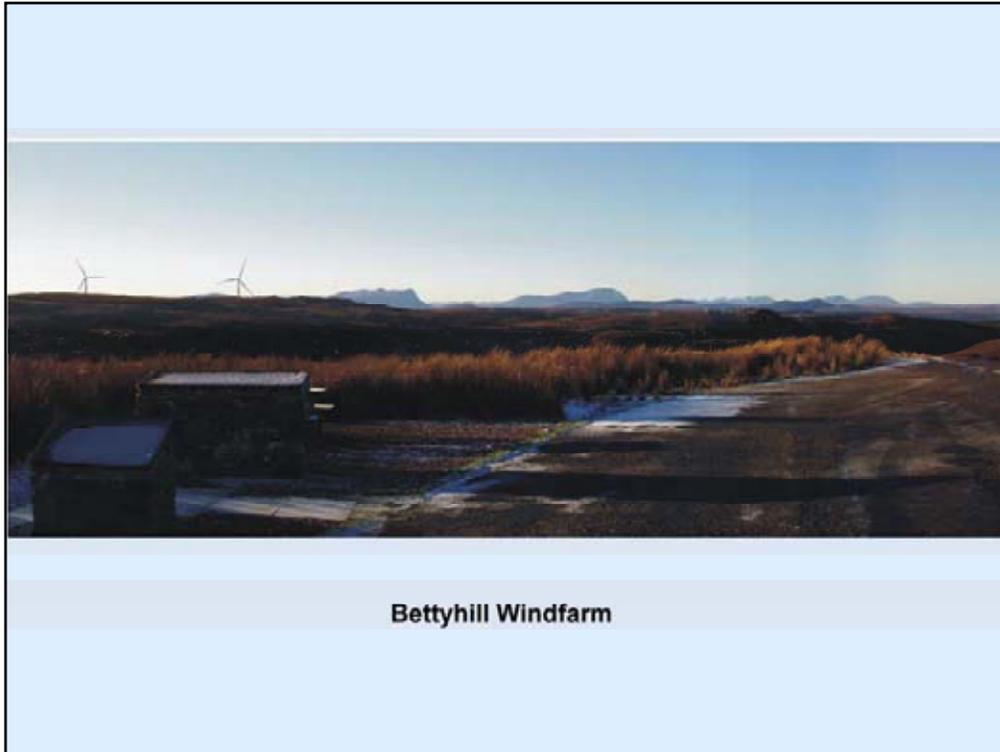
SNH had objected to Stronelaigr Windfarm. In the past an objection by SNH triggered a Public Inquiry and guaranteed a proper examination. That has now been overruled. Same happened in Shetland. So they have no teeth. It is just window dressing.



This is a Viewpoint on the road along the north coast of Scotland and is the most stunning view out of many stunning views. It has a huge layby because everybody coming to it for the first time stops and leaps out their car to take photographs.

It is a beautiful place.

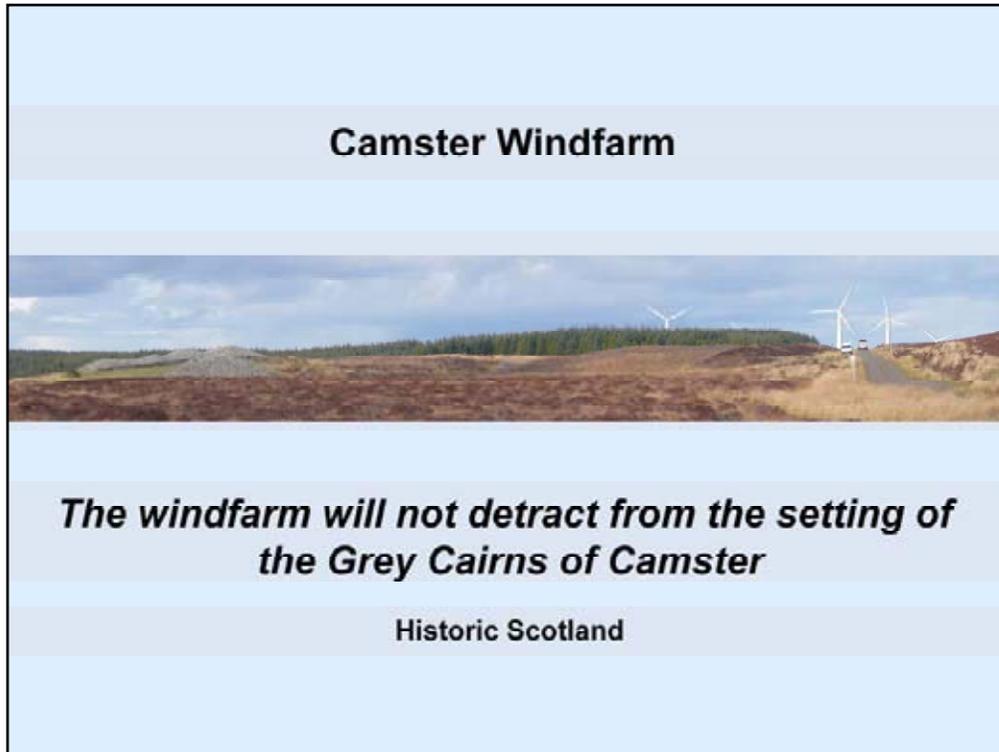
Or was.



This is actually a photomontage but these turbines are there now. You don't see the mountains when you turn the corner. This is what was supposed to be protected.

SNH in their response to the Planning Authority actually suggested that to avoid tourists seeing that sight from the layby, the layby should be put somewhere else.

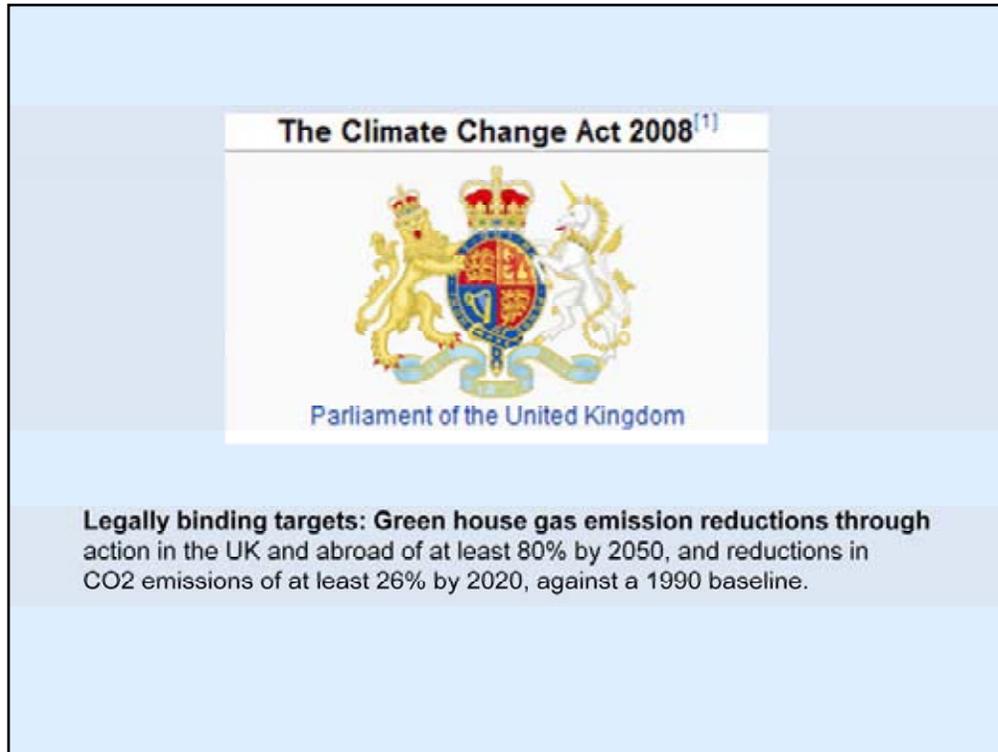
You couldn't make it up.



This is Camster Windfarm also in Caithness. Historic Scotland advised that

The windfarm will not detract from the setting of the Grey Cairns of Camster

I took friends visiting Caithness on a sightseeing tour. We drove past the Grey Cairns of Camster and my friends didn't see them because of the mesmerising impact of the turbines. The Cairns are on the left of the picture.



In 2008 the UK Govt passed the Climate Change Act which requires us to reduce greenhouse gases by 80% by 2050.

A phenomenal reduction in greenhouse gases.

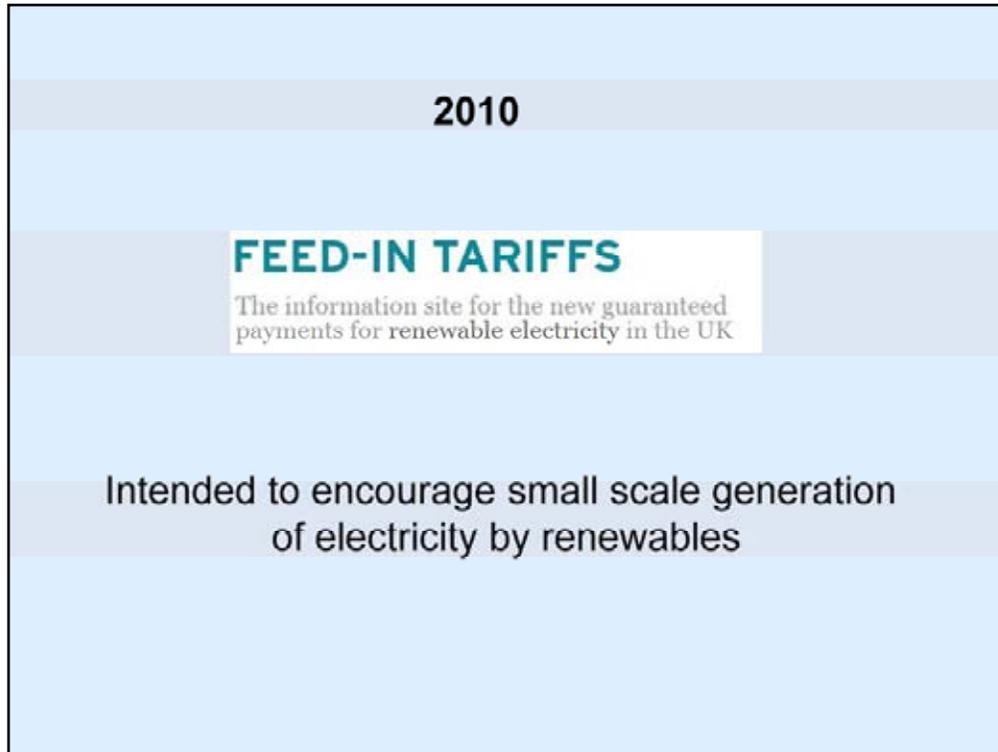
650 MPs in this country

About 460 took part in the debate

5 opposed it

And nobody asked how it was to be achieved

You couldn't have predicted that.



This is another thing you couldn't have expected.

Feed-in Tariffs were brought in in 2010 with the intention of encouraging small scale generation of electricity by renewables. Remember the imperative? Generate by renewables.

Very briefly if I have a big garden and a small windmill and I generate electricity, Scottish Hydro Electric will pay me to generate that electricity - a lot more than I could buy it for - then I can use that electricity myself and sell back my surplus and make more money.

Now that you couldn't have imagined, and that is why solar panels and small windfarms are popping up all over the country.

But Scottish HE are not in the business of giving away money. They have to get it back from somewhere else and this involves a really nice sounding word. It is "socialisation".

And Scottish Hydro "socialise" my good fortune by spreading the cost around everyone's electricity bills.

Every solar panel you see, every small windmill, and some pretty big ones - up to 5MW - you personally are paying a very small part of that cost.



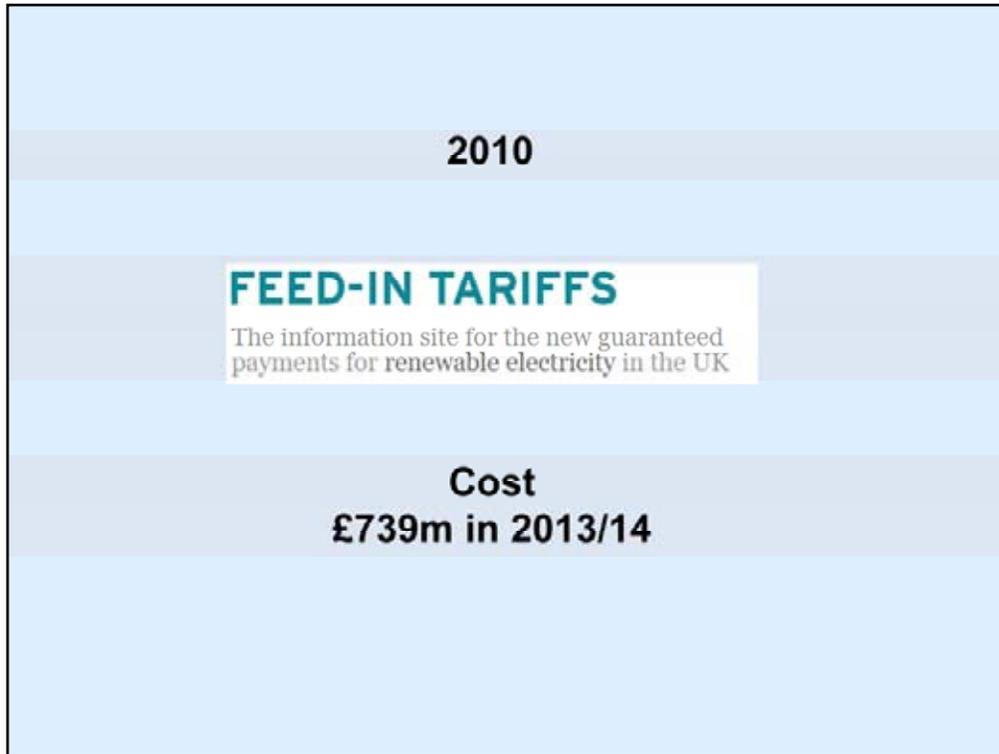
£12m in 2010/11



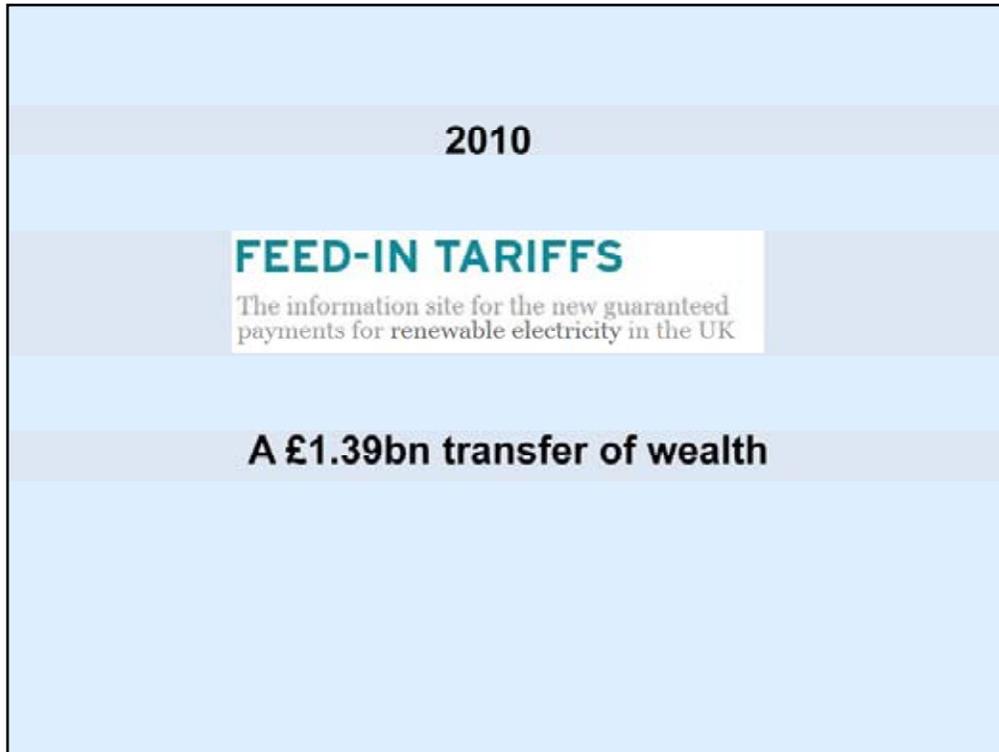
£136m in 2011/12



£504m in 2012/13



£739m last year and rising



That has been a £1.39bn transfer of wealth from people who don't have solar panels or small windmills to people who do have solar panels or windmills.

The contribution to green house gas reduction is nil.

And that is guaranteed inflation proof for 20 years.

2010

FEED-IN TARIFFS
The information site for the new guaranteed payments for renewable electricity in the UK

£21.50 so far from every man woman and child in the country



Guaranteed inflation proof for 20 years and rising

Up to the end of March 2014 each one of us has shelled out £21.50.

I don't think anyone voted for that.

But since the scheme was put in place, it was entirely predictable.

It has probably cost another £700 million since the end of March.

This bubble has to burst. It is unsustainable.



If you think that was unexpected, there is the Connect and Manage Regime.

It was devised by Ed Miliband in office, and implemented by the new coalition Government as one of its first actions in office, almost certainly with no-one in power understanding its implications.

Essentially, round about 2010, National Grid were still trying to be engineers.

Windfarms were coming along with planning permission and wanting to connect to the grid. NG was saying, “no you can’t, not until we have the kit in place. We are not going to connect you just now because it won’t work”.

It some cases it was going to take up to 8 years until the transmission was in place to connect the windfarms without risk to the system.

The wind industry didn’t like it and lobbied Government. Govt said to NG “go on, just connect them, and manage.”

And that means;

“Connect anyway even though it is foolish in engineering terms and it will cost a fortune”

Totally *predictable*.

**Whitelee Windfarm was connected
8 years before the transmission
would be fully in place**

- **Paid £15.75 million to 5th November 2014**
- **5 years to run till transmission in place**
- **Close to £100 million paid openly to 5th November 2014**
- **£??m in confidential “forward trading”**

Whitelee Windfarm was one of the beneficiaries, connected early. It was connected 8 years in advance of the total system being in place.

The transmission between Scotland and England - across the border, down the coast, massive substations, a lot of reconfiguration in the north of England - all has to be carried out before Whitelee can be safely connected so that it can be securely accommodated on the system.

Up to 5th November 2014, it had been paid £15.75m in compensation for being constrained off when the system could not take the output. It is still 5 years before it can be properly connected into the system.

We are nudging £100m in visible constraint payments to generators at the moment because of Connect and Manage.

There are also invisible payments. There is an arrangement called “forward trading” which is a commercially confidential way of making payments to constrain off generation. When it was first uncovered by the Renewable Energy Foundation (*in 2010*) that stood at £13m when visible payments were £12m.

I know of two big windfarms in Caithness that get shut down when there is plenty of wind but the figures for what they are paid don't appear anywhere, and they don't do it for nothing.

The cost of Connect and Manage is “socialised”.



And it gets even more bizarre.

Short Term Operating Reserve is the back-up that NG keeps for unexpected happenings. There was a fire at - Didbury was it - recently? They need plant that is able to step in and carry the load for a short period until they reconfigure their other options and get back stability.

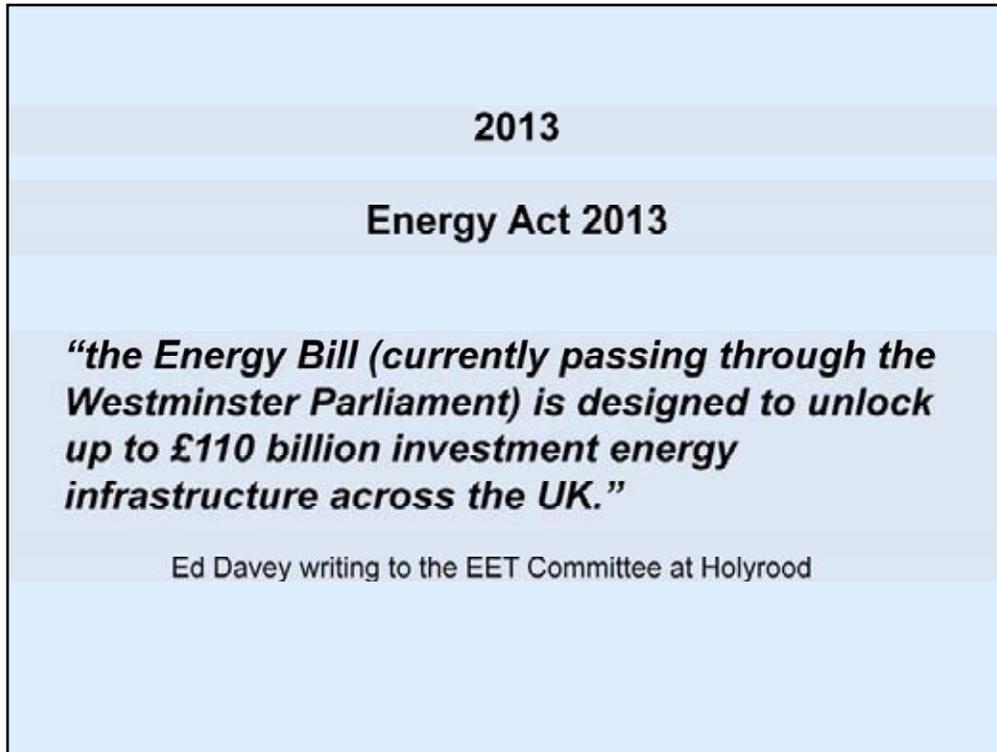
STOR used to be covered by the existing plant capacity with a comfortable margin but here we are down to 4% this winter, while a couple of years ago it was 12%.

Much coal has been shut down by Europe and many gas plants which come second in the pecking order to wind have become unprofitable and a number of them have been mothballed. They can be restarted but not this week and perhaps not this month.

So NG still needs a Plan B for these unexpected events, and what you are looking at is a compound full of diesel generators. That is a commercial organisation contracted to give NG STOR.

We are burning diesel generators to go green. The problem was easily foreseen, but this particular solution was not. It costs up to £7000 per MWh to generate and incurs stand-by costs as well.

You couldn't have made it up!



The Energy Act.

Remember when Donald Trump came to Holyrood? He gave evidence to the Economy Energy and Tourism Committee. When the ensuing report was issued in draft, Ed Davey from DECC wrote to the committee chairman:

“the Energy Bill (currently passing through the Westminster Parliament) is designed to unlock up to £110 billion investment energy infrastructure across the UK.”

2013

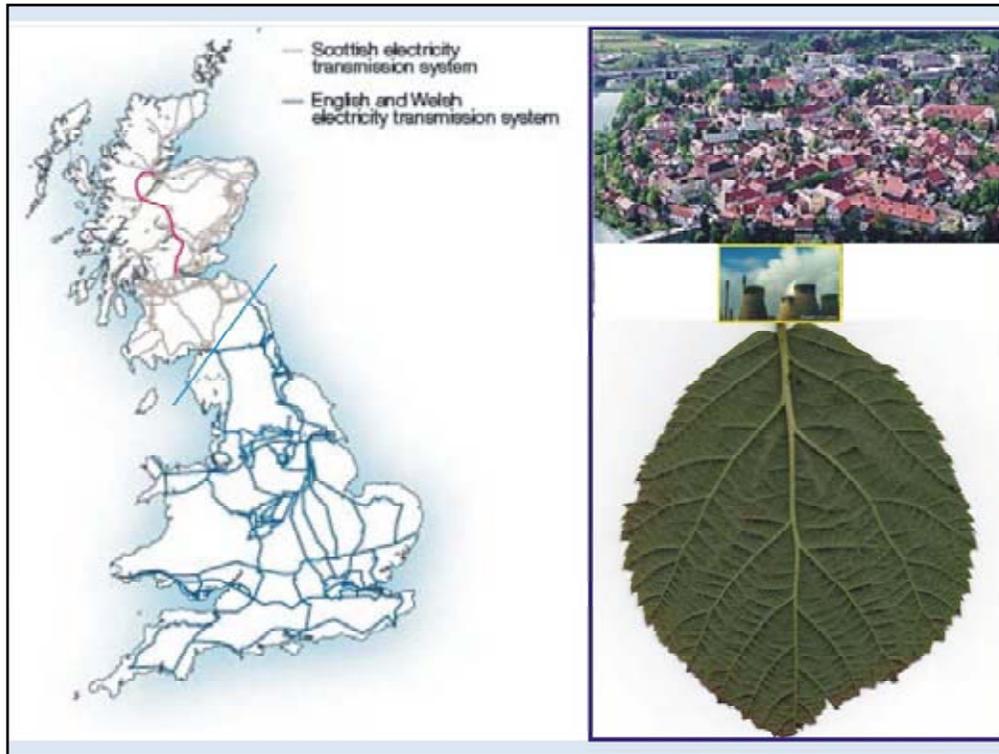
Energy Act 2013

“the Energy Bill (currently passing through the Westminster Parliament) is designed to unlock up to £110 billion investment energy infrastructure across the UK.”

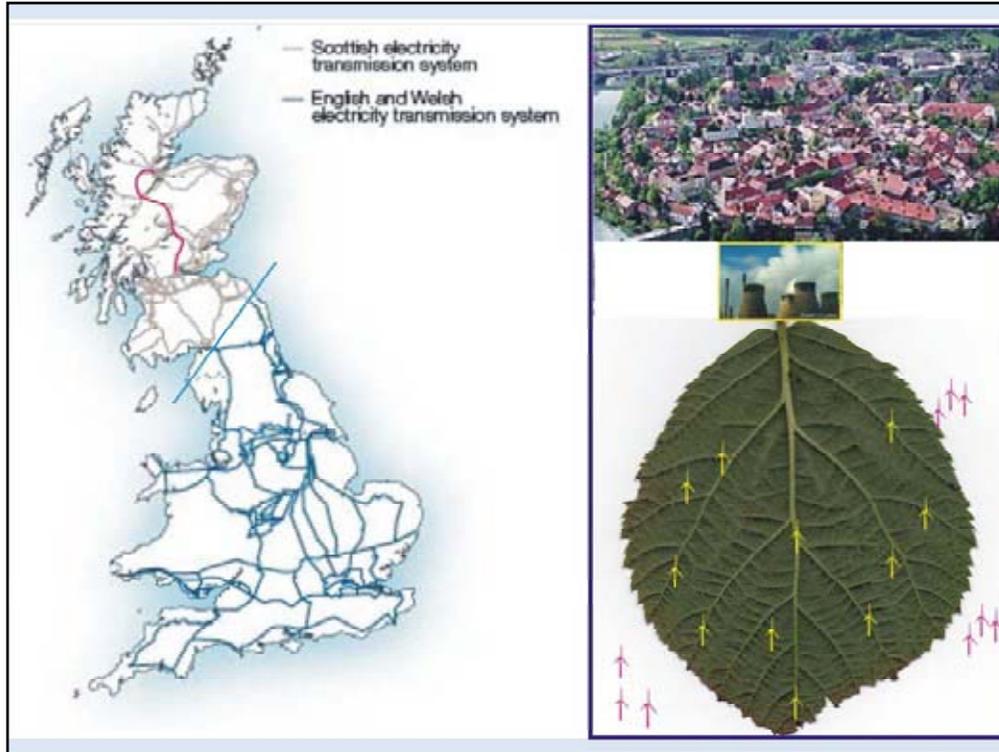
£110 billion is £1692 each

That is £1692 each, including your children and your grandparents. And a large part of that is for the transmission you need before you get over the Connect and Manage Regime.

That has to come back to you sometime – this is your future.



What you have on the left is National Grid transmission layout; on the right you have a town with a power station next to it and a bramble leaf representing the distribution system out into the country. The veins represent the wires which are big when they leave the power stations, becoming smaller as they branch out, and ending up as small wires as they come into our houses.



If you put power stations, which windfarms are, remote from the populations where the electricity is needed, the wires are all the wrong size. You can't use that electricity unless you upgrade the grid and reverse that bramble leaf, and that is where a lot of the £110bn is going.

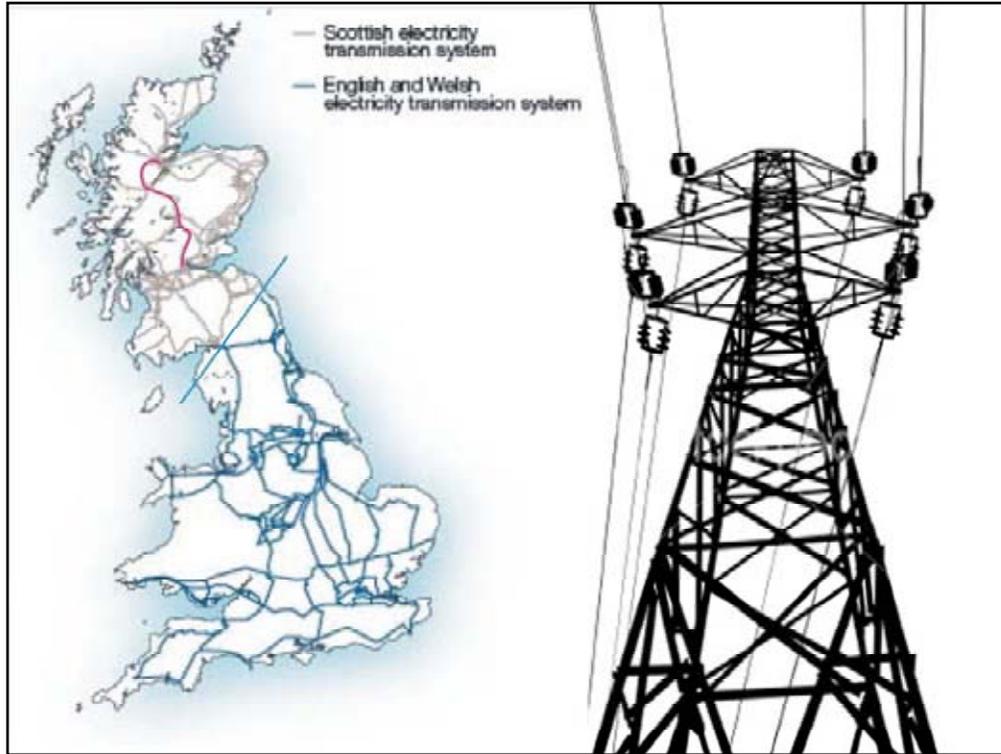
And that is what we are doing. We are putting power stations in Caithness when the nearest that electricity is needed is around Birmingham. Scotland's requirements are well served long before then but we can't get it across the border, we don't have the subsea cables to get it to the north of England and the north of England transmission has not been upgraded.

Yet we are consenting windfarms day after day.

The output from every new additional windfarm is added to the amount of generation to be constrained off when conditions dictate it.

It is absolutely inevitable..... The more you pour in, the more you pay!

And the way out of it is this....



Lots and lots of these, lots of substations and lots of subsea cables – but we haven't done it yet!

2014

We find ourselves in this ruinous condition because since 1989 when the Central Electricity Generating Board was put up for sale, **there has been no person or organisation responsible for the strategic planning of electricity generation and distribution.**

A scandalous state of affairs, and the alternative is so simple but probably too late.

We are in this ruinous condition because since 1989 when the Central Electricity Generating Board was put up for sale, **there has been no person or organisation responsible for the strategic planning of electricity generation and distribution.**

None of the decisions which led us to the present sorry state have been made by engineers.

But you can't run an energy system without engineers.

There is no shortage of engineers, just an inexplicable refusal by politicians to listen to them.

IESIS
A MULTI-DISCIPLINARY
ENGINEERING INSTITUTION

**The effect of wind energy
in the electricity system**

IESIS promotes the principle that, before proceeding with any policy for the electricity system, comprehensive independent assessments should be carried out. This would significantly reduce the risk of unsatisfactory outcomes

This presentation explains the serious difficulties involved in introducing wind generation to the system.
For more information about the IESIS stance on how policy for the electricity should be formulated see: www.iesisenergy.org

www.iesis.org

IESIS stands for the Institute of Engineers and Shipbuilders in Scotland.

Engineers. At last.

IESIS recently produced a presentation called “The effect of wind energy in the electricity system” .

Read out from “IESIS promotes” to “to the system”.

The serious difficulty is that wind doesn’t come along when you want it, it is very variable, you don’t know what you are going to get, and the very strong probability is that it won’t be there when you really need it.

I am going to skip to the last page, but the full presentation is well worth reading and can be found at: <http://www.iesisenergy.org/IESIS-effect-of-wind.pdf>

What should be done?

The fundamental problem in planning for the electricity system to reduce CO₂ emissions - this is a worldwide problem - is that decisions are being made without investigating their unintended consequences.

A professional approach to electricity planning would be:

1. Decide on a standard for security of supply - e.g. that the risk of supply not meeting demand would only occur 4 times in 100 years. Seek to ensure that any planned mix of generation would be in accord with the standard.
2. Consider a range of options for the generation mix and develop information about all their expected positive features and all their expected negative features. Compare the options against a set of criteria that would include cost, green objectives, health and safety, etc.
3. Then make informed decisions.

Would that be a sensible way forward?

What should be done?

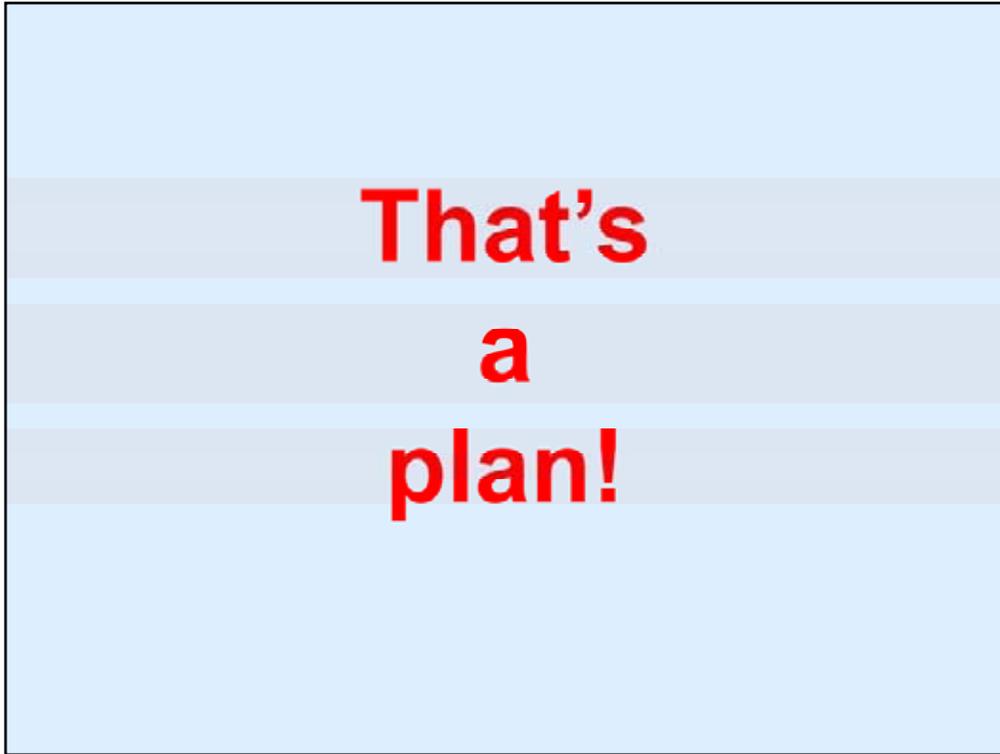
The fundamental problem in planning for the electricity system to reduce CO₂ emissions - this is a worldwide problem - is that decisions are being made without investigating their unintended consequences.

That is precisely the theme of my presentation.

A professional approach to electricity planning would be:

1. Decide on a standard for security of supply - e.g. that the risk of supply not meeting demand would only occur 4 times in 100 years. Seek to ensure that any planned mix of generation would be in accord with the standard.
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3. Then make informed decisions.

And would that be a sensible way forward?



That's what I call a plan.

But we are 25 years too late in implementing it.

I have absolutely no idea how we are going to get ourselves out of the mess we are in.

Thank you very much.