

Enough is enough: new gas-fired power station capacity in the UK



How much new gas does the Government say is likely?

According to the Government's most recent estimates, published in DECC's Updated Emissions Projectionsⁱ in October 2011, an additional 4.9 gigawatts (GW) of new gas-fired electricity generation capacity is projected to come online by 2020. Of this, 4.1GW is projected by 2016.

However the Committee on Climate Change has said that the UK needs to decarbonise its energy system, reducing carbon dioxide emissions per unit of electricity generated by 90% by 2030. This level of new gas capacity on top of existing gas capacity is not compatible with meeting this decarbonisation target, unless it is less frequently used than DECC assumes.

How much new gas is coming through the system?

Friends of the Earth has compiled a list of power station projects that have been granted Government consent, that are currently going through the planning system, or where an application is expected soon. This information is taken from a number of sources including:

- National Grid's 2011 Seven Year Statementⁱⁱ;
- the projects database published by New Power Consultingⁱⁱⁱ in its publication 'New Power'; and
- company websites

We have divided the projects into five categories:

1. 'being constructed' – projects currently being built or commissioned and expected to come online within the next year.
2. 'approved and seemingly going ahead' – these projects have received Government consent and there is nothing at this stage to suggest they are not going ahead.
3. 'approved but on hold or delayed' - these projects have received Government consent, but are currently on hold or delayed. This could be for a number of reasons, including the need for further environmental assessment or because a final investment decision has not yet been taken.
4. 'applied for' – these projects are in the planning system but haven't yet received Government consent.
5. 'pre-application' – an application to the Infrastructure Planning Commission is expected soon for these projects.

There are also projects that companies are understood to be considering, but these have not been included as many of them are at the moment speculative. Details of the projects in each category are shown below.

The total capacity in each category is as follows:

Category	Capacity (GW)
1 Under construction	3.3
2 Approved and seemingly going ahead	9.7
3 Approved but delayed / on hold	3.2
4 Applied for	3.3
5 Pre-application	2.9

The key categories are 1,2 and 3 where Government consent has already been given. These projects total 16.2GW. Information from National Grid and New Power shows that all of these projects could be online before 2020. This is in addition to 3.9GW of new capacity that has come online in the last 18 months.

However it is likely that not all of these projects will be built, due to investment decisions and the impact of the economic downturn on demand:

- Recent analysis from Bloomberg New Energy Finance^{iv} concludes that 11GW of new gas plants could be built in 2012 – 2016
- If conservative assumptions were applied to Friends of the Earth’s figures above (with all the capacity currently being built coming on line; half of that which has consent and is seemingly going ahead; and a quarter of that which has consent but is currently on hold) then almost 9GW of new capacity could be added to the system.

In both cases, this is significantly above the Government’s projection of new capacity, which is itself higher than the CCC’s carbon targets.

Conclusions

Friends of the Earth believes that gas has a role to play in the UK’s energy future. This should be as a transition fuel, allowing us to move away from more-polluting coal-fired electricity generation, and in the medium to long term (towards 2030) as peaking plant to cover system variability.

The Government’s projections suggest that 4.9GW of new gas-fired electricity generation could come on line by 2020. However the Government’s advisors in the Committee for Climate Change have said that, in order to meet its climate change targets, the UK should effectively decarbonise its power system. This means reducing per-unit carbon dioxide emissions from electricity generation by 90% by 2030. The level of new gas-fired capacity projected by the Government would put meeting this target in real jeopardy.

But estimates of new capacity likely to come online this decade are significantly above even the Government’s projections: Bloomberg New Energy Finance suggests that new capacity added by 2016 could be more than double what the Government projects for the rest of the decade.

This means we risk a second dash for gas, and being locked in to a high-carbon power system.

Friends of the Earth believes that the Government should not consent any further gas power plants unless they have already introduced a tough Emissions Performance Standard (EPS), which limits the amount of carbon emissions from power plants. The Government is currently proposing to introduce a weak EPS, which will have no impact on new gas power stations as part of its upcoming Electricity Market Reform. Friends of the Earth believe that the EPS should be tougher and the level should drop over time, so that emissions from the power sector are no more than 50g CO₂/kWh in 2030, consistent with the advice of the independent Committee on Climate Change.

Friends of the Earth also believes that the Government should amend the planning rules in the National Policy Statements to limit new gas consents unless they are fitted with Carbon Capture and Storage, as is already the case with coal.

DETAILS OF PROJECTS

1 Being constructed = 3.3GW

Company	Project	Size GW	Notes
RWE Npower	Pembroke	2.0	Online end 2012
EDF	West Burton B	1.3	Online during 2012
Welsh Power	Cardiff	0.01	Online May 2012

2 Approved and seemingly going ahead= 9.7GW

Company	Project	Size GW	Notes
Acorn Power / GE	Thorpe Marsh	1.5	Online 2015?
Centrica	Kings Lynn 2	0.9	Online 2014/16?
ESBi / Carlton	Partington	0.9	Online 2013 / 14?
Intergen	Gateway	0.9	Online 2014/15?
Intergen	South Holland	0.9	Extension of existing plant - online 2014?
SSE	Keadby 2	0.9	Online 2016/17?
Scottish Power	Cockenzie	1.2	Online 2016?
Scottish Power	Damhead Creek 2	1.0	Online 2016?
Carlton	Trafford Peaking Power	0.2	Online 2012?
Wainstones Energy	Carrington 2a / 2b	1.3	Online 2015?
Welsh Power	Cale	0.05	Online 2013?

3 Approved but on hold / delayed = 3.2GW

Company	Project	Size GW	Notes
Conoco	Norsea Seal Sands	0.8	Has DECC consent but more work needed as EU designated bird sites. Could be online 2016?
Eon	Seal Sands / Brine Field	1.0	Has DECC consent but on hold. Could be online 2018?
2Co Energy/ Shell	Don Valley	0.9	Has DECC consent but investment decision 2013? Could be online 2015?
SSE / Atco / EDF	Barking Power	0.5	Has consent but decision to proceed delayed. Could be online 2014?

4 Applied = 3.3GW

Company	Project	Size GW	Notes
EDF	Sutton Bridge	1.3	Project deferred for reassessment
RWE Npower	Willington	2.0	Has DECC consent but pipeline permissions needed.

5 Pre-application = 2.9GW

Company	Project	Size GW	Notes
RWE Npower	Tilbury	2.0	To replace coal-fired plant – application expected soon.
Scottish Power	Avon	0.9	IPC has pre-application information.

ⁱ <http://www.decc.gov.uk/assets/decc/11/about-us/economics-social-research/3134-updated-energy-and-emissions-projections-october.pdf>

ⁱⁱ <http://www.nationalgrid.com/uk/Electricity/SYS/current/>

ⁱⁱⁱ <http://www.newpowerconsulting.com/>

^{iv} <http://bnef.com/WhitePapers/download/64>

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