

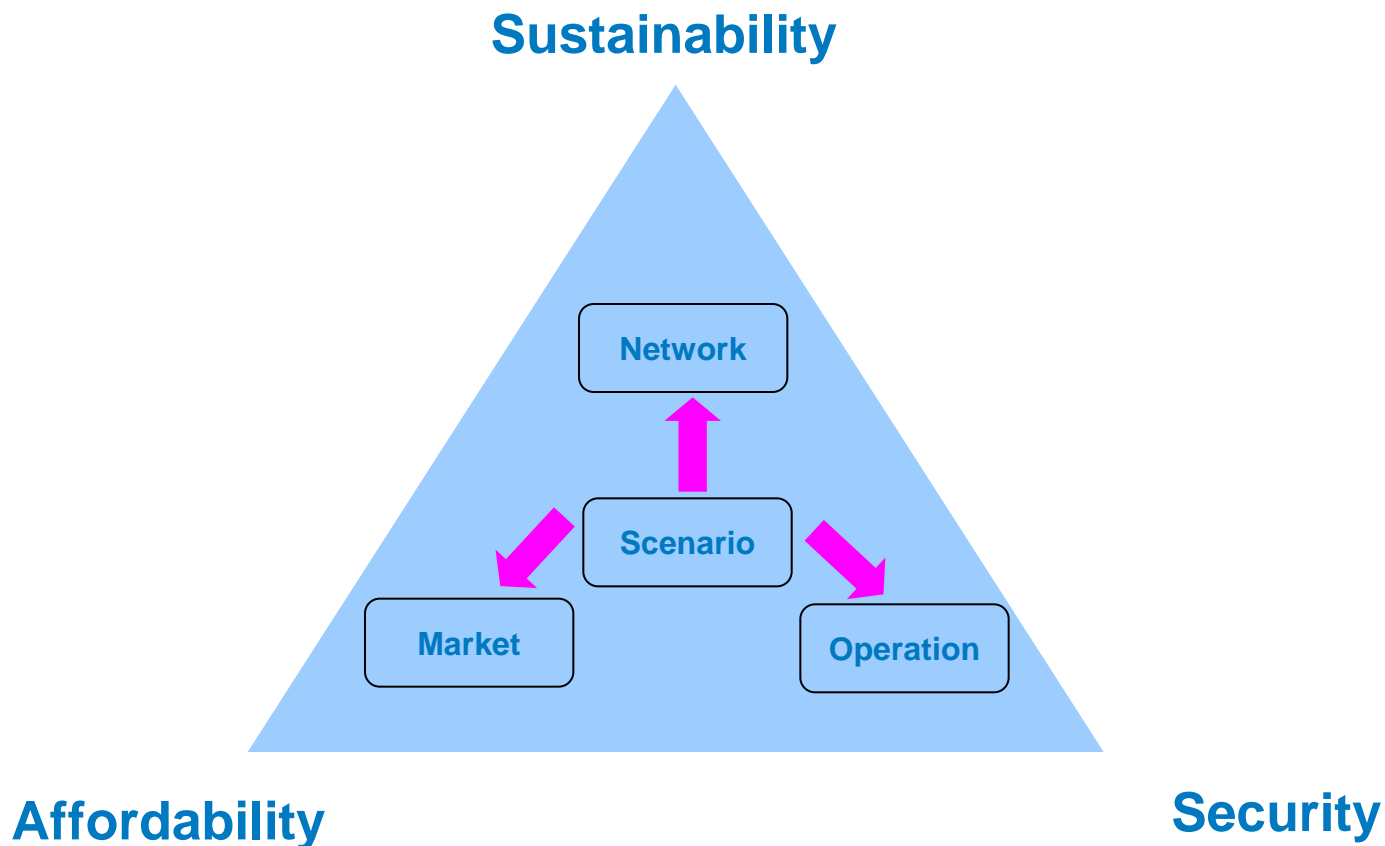
# Project Discovery seminar - scenarios

Alison Kay, Commercial Director – Transmission  
12 November 2009



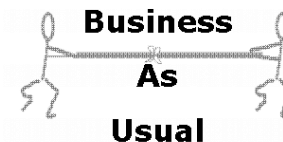
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# The Energy Policy Triangle

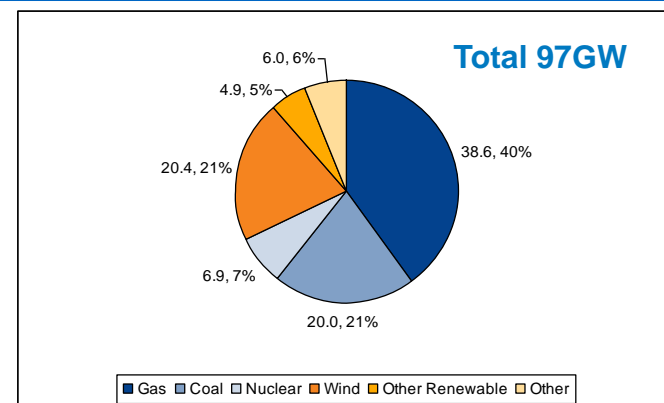


**The challenge is to meet all three policy objectives simultaneously in a timely way**

# Business As Usual – Misses Targets



- ◆ Plant Closures
  - ◆ 12GW coal & oil (LCPD)
  - ◆ 7.5GW nuclear
- ◆ Modest new renewables
  - ◆ 18GW wind (11GW onshore)
  - ◆ Some biomass
- ◆ Significant non-renewable build
  - ◆ 14GW gas (capacity share rises to 42%)
  - ◆ 3GW supercritical coal (some with CCS)
  - ◆ 3GW nuclear
- ◆ Electricity demand remains flat
- ◆ Renewable share of generation grows from 5% to 18%



2020 Target Description	Progress
EU Renewable Target; 15% of final energy demand	✘
2050 CO <sub>2</sub> Target on correct 'flight path'	✘
Scottish Renewables Target	✔

**Summary**

Generation gap caused by closures is largely filled with gas-fired plant, augmented with incremental nuclear build and some renewable wind in E&W and Scotland

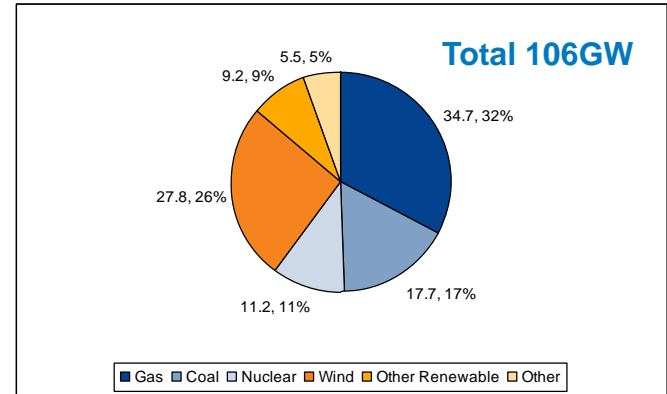
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# Gone Green (2009) – Meets Targets



- ◆ Plant Closures
  - ◆ 12GW coal & oil (LCPD)
  - ◆ 2.6GW nuclear
- ◆ Significant new renewables
  - ◆ 28GW wind (11GW onshore)
  - ◆ Some biomass, tidal, wave & solar PV
- ◆ Significant non-renewable build
  - ◆ 13GW gas
  - ◆ 3GW supercritical coal (some with CCS)
  - ◆ 3GW nuclear
- ◆ Electricity demand remains flat
- ◆ Renewable share of generation grows from 5% to 32%

**PLAUSIBLE  
BUT  
EXTREMELY  
CHALLENGING**



2020 Target Description	Progress
UK Renewable Target 15% of final energy demand	<input checked="" type="checkbox"/>
2050 CO <sub>2</sub> Target on correct 'flight path'	<input checked="" type="checkbox"/>
Scottish Renewables Target	<input checked="" type="checkbox"/>

**Summary**

Generation gap caused by closures is filled with wind, augmented by gas & clean coal. Nuclear returns in 2020.

370MtCO<sub>2</sub> (-37% on 1990)

Target -34%

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# Scenario Comparison – Generation Capacity

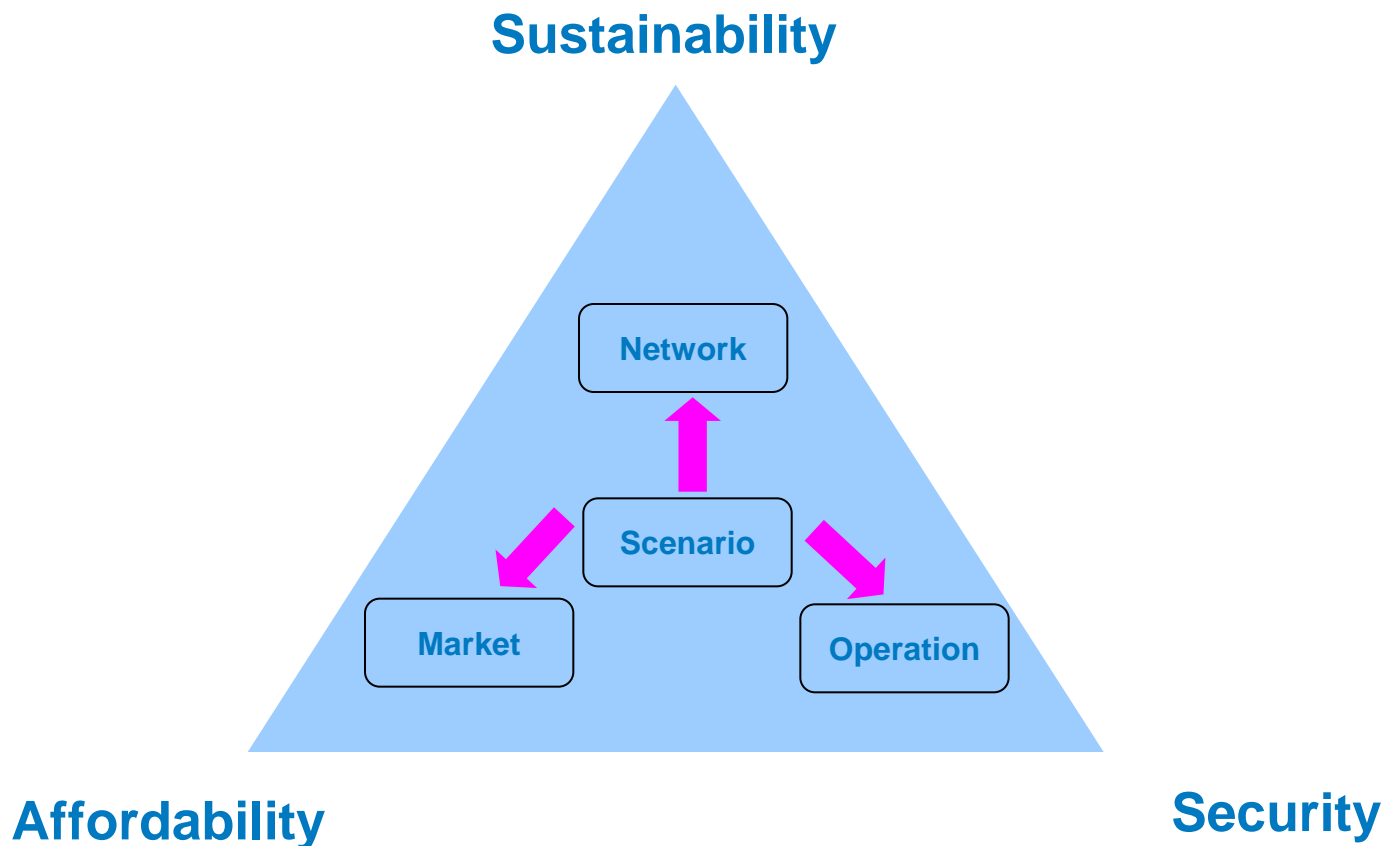
2020 GW	NG 2009 Gone Green	Ofgem Green Transition	Ofgem Green Stimulus	Ofgem Dash for Energy	Ofgem Slow Growth	NG BAU Apr '09
CCGT	30.3	27.5	27.5	44.7	35.6	34.8
Coal	17.7	24.2	17.0	20.6	20.2	20.0
Nuclear	11.2	9.3	9.3	3.7	3.7	6.9
CHP*	4.4	4.9	4.9	4.9	4.9	3.8
Wind	27.8	28.6	27.2	14.2	12.9	20.4
Other Renew	9.2	6.3	6.2	4.7	4.5	4.9
Other	3.5	2.7	2.7	2.7	2.7	4.0
Interconnectors	2.0	3.5	3.5	2.5	2.5	2.0
Total	106.1	107.0	98.3	98.0	87.0	96.8
Inters Floating	1.7	0.0	0.0	0.0	0.0	1.7

\*CHP adjusted to be on consistent basis

# Gas Demand & Supply

- ◆ Our Business As Usual demand forecast falls roughly halfway between the scenarios with flat demand.
- ◆ Discovery Green scenarios show gas demand falling over the next decade which is consistent with our “Gone Green” view with energy efficiency measures playing a vital role.
- ◆ The other scenarios show growth supported by the continued growth in gas fired power generation as per current construction programme.
- ◆ However the potential for biomethane injection shouldn't be overlooked to help meet renewable energy targets.
- ◆ The gas supply scenarios are consistent with our view with little variation in UKCS and Norwegian flows with the balancing source being LNG followed by continental pipeline imports.

# The Energy Policy Triangle



**The challenge is to meet all three policy objectives simultaneously in a timely way**

**Thank you**

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