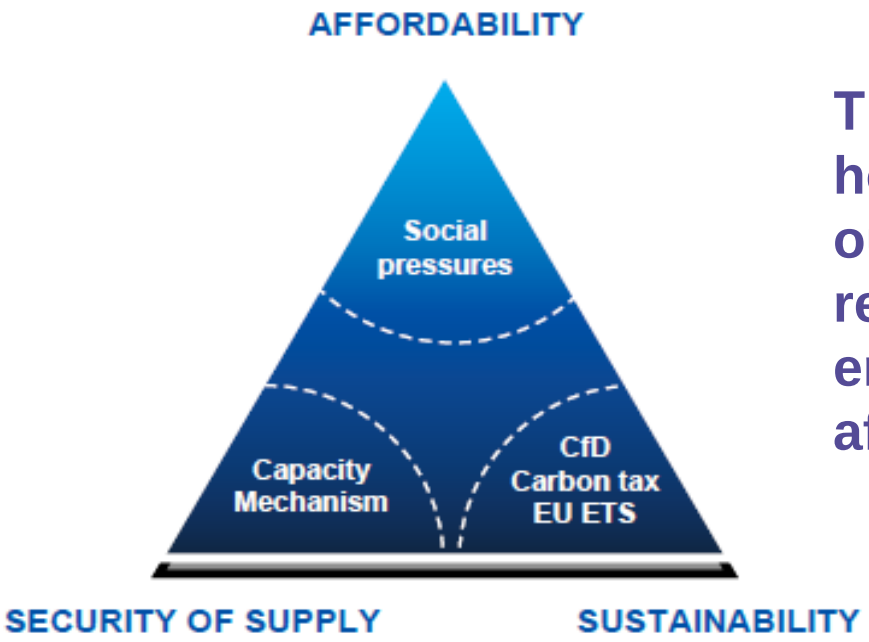
Electricity Market Reform (EMR)

21 November 2013

What is the Electricity Market Reform (EMR)?

The government is pursuing EMR to prepare the UK's generation market for the future, as existing fossil fuel plant goes offline and we have to work to tighter targets to reduce our carbon emissions. A key aspect of this is creating a market which will attract more than £100 billion of investment in the new electricity infrastructure we require in this decade alone. The aim of EMR is to create a legislative framework which will deliver a low-carbon, secure and affordable energy supply via a diverse portfolio of generation sources

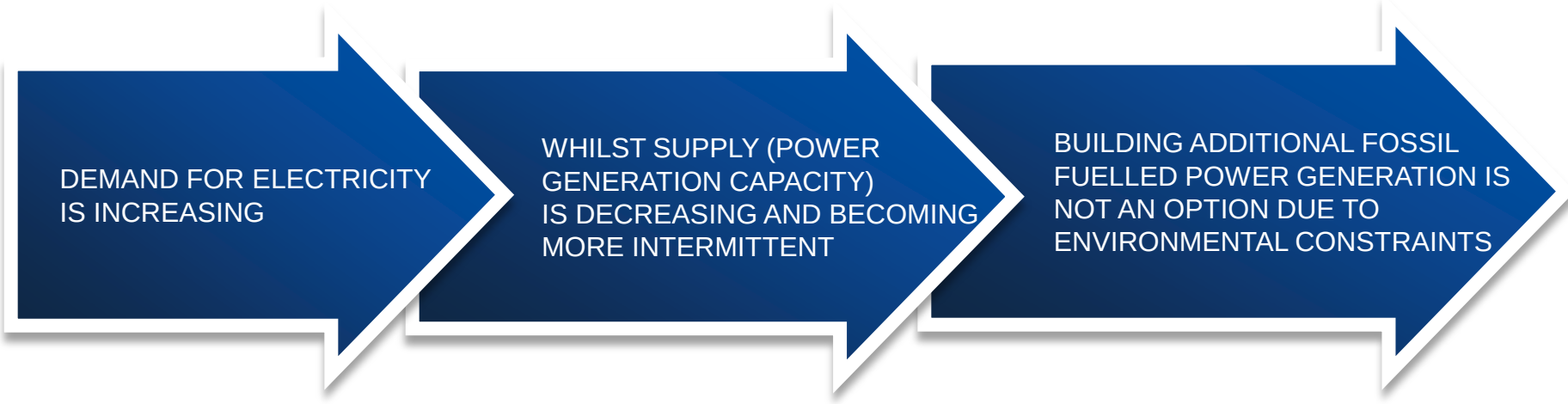
The Energy Trilemma



The ‘trilemma’ for government is how as a nation we adhere to our sustainability targets whilst retaining security of supply and ensuring that electricity is affordable for customers.

Better value, delivered.

The electricity market will change fundamentally over the coming years as demand increases and supply changes



- DECC forecast an increase in demand from 350 TWh per year to around 550 TWh per year by 2030[1] driven by the electrification of vehicles and heat.
- Due to increasing environmental legislation, older, more polluting plant has to close.
- Existing nuclear plant expected to close by 2020.
- Renewable supply is intermittent.
- Government has set legally binding CO_2 reduction targets (35% by 2020, 50% by 2025, 80% by 2050 compared to 1990 levels).
- Target of 15% of energy from renewable sources by 2020.

The Electricity Market Reform (EMR) has 4 pillars

Carbon Price Support
Tax to ensure generators pay a minimum price for their carbon emissions.

Carbon Floor Price to 2020

Emission Performance Standard (EPS)
Clearly defined set of emission levels to prevent investment in carbon intensive power stations (i.e. coal without Carbon Capture and Storage (CCS)).

EPS = 450g CO_2 / kWh
- only applicable to new plant

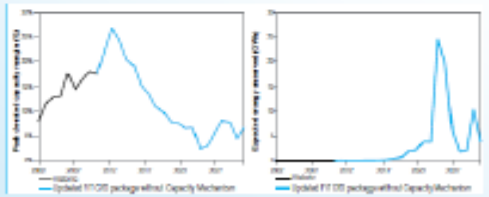
ENERGY BILL

Low Carbon Generation Feed In Tariffs/ Contracts for Difference (CfD)
Low carbon generators are guaranteed a fixed price for power generated, but have to pay back if the market price goes above the fixed price.

Operation of Contracts for Difference

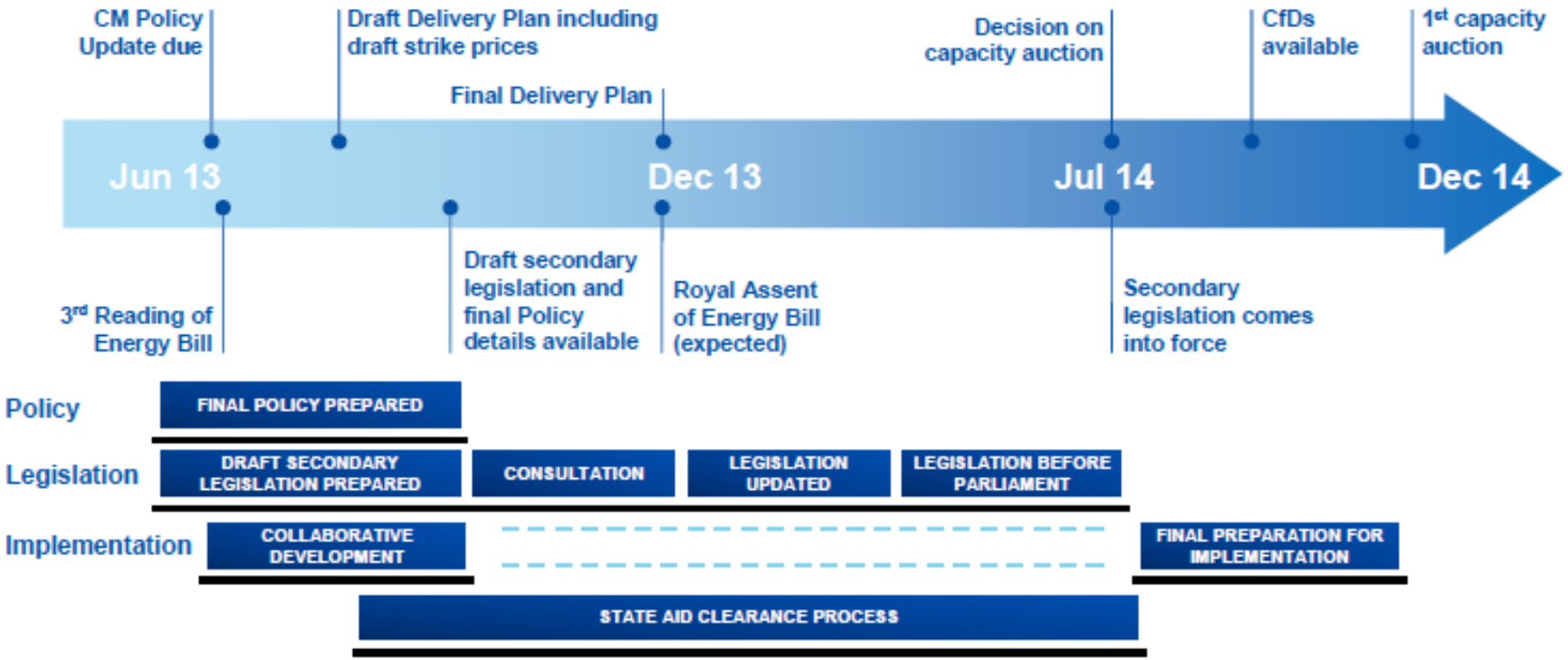
Capacity Mechanism
Market wide mechanism designed to ensure adequate, reliable power generation capacity is in place to meet peak demand.

Peak De-rated Capacity Margin



Expected to appear as line items on business bills, similar to FIT

Legislation Timeframe



Contracts for Differences (CfD)

Guarantees a fixed price (strike price) for each low-carbon generation, A ‘top up’ is added to the wholesale price providing greater certainty to those investing in new technologies.

Costs reviewed annually, costs levied on all suppliers, with only Intensive users exemptions. First costs added Dec 2015.

It will run alongside then replace the Renewable Obligation from April 2017. The Levy Control Framework (LCF) will cap total income at £7.62bn (2012 prices) by 2020.

Expected to add between £8 and £10 per mWh to electricity by 2020.

Capacity Mechanism

Ensure that there is sufficient energy supply to meet future demand based on National Grid forecasts.

Annual auctions for reliable capacity will start in 2014, for delivery in 2018/19. Costs will be capped as determined by Secretary of State.

Plant in receipt of other funding in currently excluded (RO, CfD, FiT, RHI).

Charges recouped from suppliers based on peak demand eg. Triad Charges.

Capacity Mechanism

Demand side response pilot auctions held 2014 for 2015/2016 delivery.

Expected reduction in wholesale prices of £3 - £10 as wholesale peaks are reduced.

The cost of buying capacity in this way is expected to exceed any reductions and could add a further £7 - £20 per mWh by 2018.

Potential opportunity for some to avoid some of these costs.

How Much Will It Be?

CfD		CAPACITY MECHANISM		EMR
£10/MWh by 2020	+	£3 - £15/MWh by 2018/19	=	£13 - £25/MWh by 2020

Summary - Electricity Costs 2020

Increased costs associated with EMR of circa £25 / mWh.

Distribution costs raise by above inflation, in worst cases increasing by 50% over period.

Carbon Floor Price, adds £10 per mWh.

Increased cost of using gas adding £10 - £12 per mWh

Potential Unit Rates

2013 – Typical inclusive cost 11p per kwh.

2020 -- Typical inclusive cost 16p per kwh.

How can we manage the Cost Impact of EMR?

1. Consume less
   Revisit investment appraisals on WLC
2. Reduce Grid Consumption
   No CfD, CM or FiT or CCL or other distribution costs on onsite generation
3. Demand Site Response
   Look to STOR and other emerging products
4. Manage Consumption Pattern
   Reduce peak consumptions

Better value, delivered.

Thank You