

# PV – Cornerstone of a sustainable recovery




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# Topics

- ▲ Sustainable recovery
- ▲ Drivers and targets
- ▲ UK policy development
- ▲ 'Feed-in' tariffs



A low-angle photograph of two modern skyscrapers against a clear blue sky. The building on the right is taller and features a glass facade with a grid of windows and a prominent blue logo at the top. The building on the left is shorter and has a more traditional facade with a grid of windows. The text "Sustainable recovery" is overlaid in a bold, orange font across the center of the image.

**Sustainable recovery**

# Green New Deal

- ▲ Recession – recovery must be sustainable
- ▲ Stimulus packages – 20% should be ‘green’<sup>1</sup>
  - > USA 12%; China 37%; Germany 13%<sup>2</sup>
  - > UK figure should be ~£10bn
- ▲ Energy efficiency & renewables a major part
  - > UK figure £0.29bn (but where?)
- ▲ Renewables in any stimulus package?

<sup>1</sup> *Professor Lord Stern*

<sup>2</sup> *HSBC*



# Green New Energy Deal

- ▲ Decentralised Energy – bridges to tariffs
  - > Extended LCBP - £230m
  - > Bioenergy grants for biomass and AD
- ▲ Bulk energy
- ▲ Energy infrastructure, including:
  - > Smart metering, distribution networks
- ▲ Skills, research and awareness

# Drivers and targets





# The EU commitments for 2020

 Emissions reductions Binding

- > 20% unilateral, or
- > 30% if multilateral

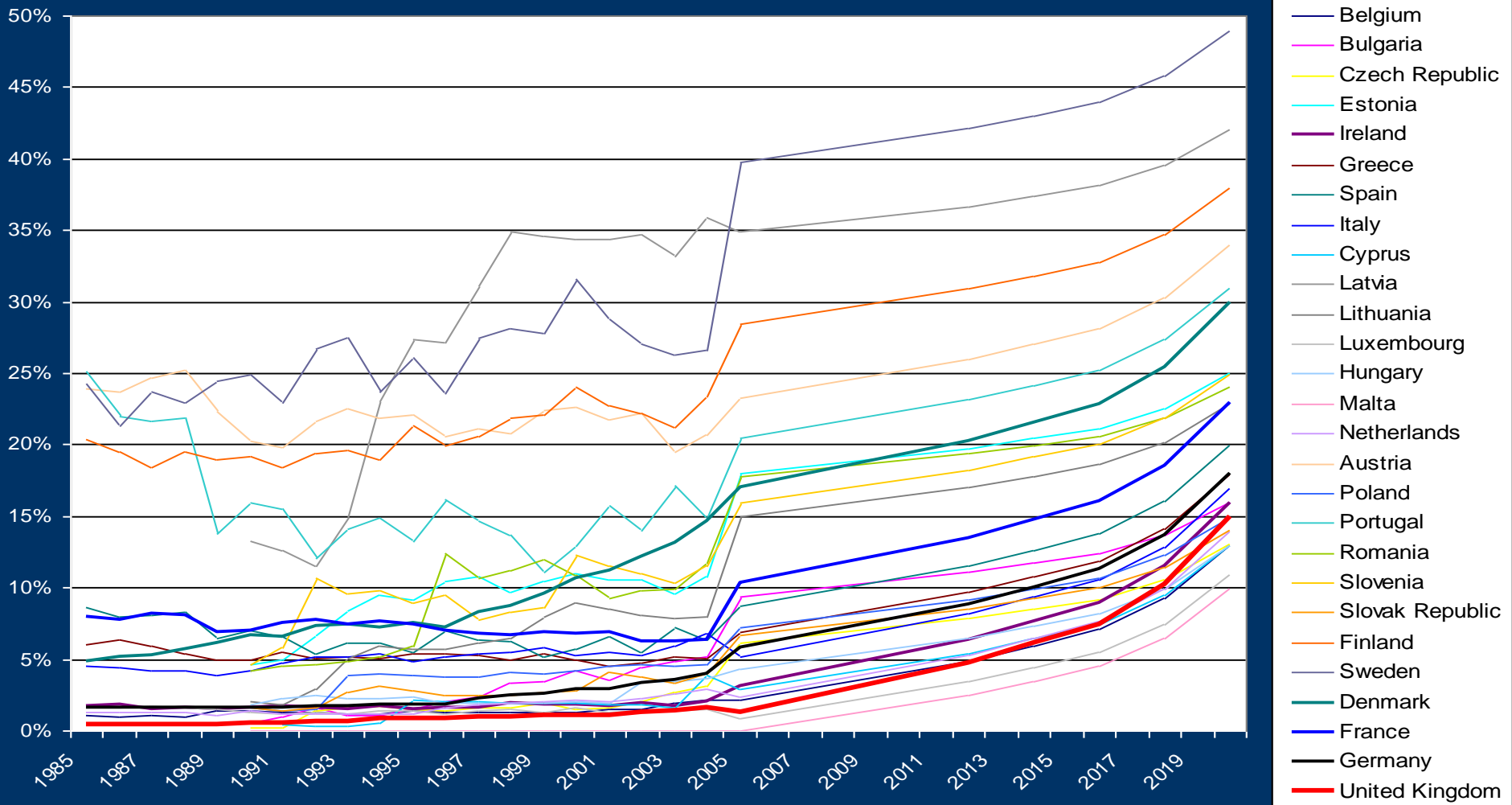
 Energy conservation Non-binding

- > 20% below current projections

 Renewables Binding

- > 20% of total energy **UK: 15%**
- > 10% of transport fuels

# Eleven years to 2020





# Energy White Paper 2007

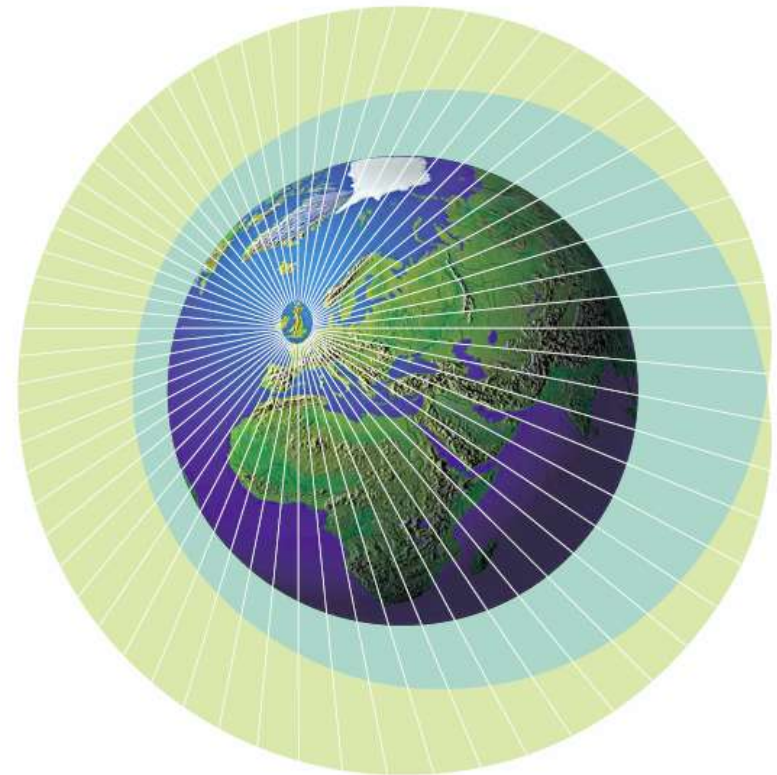
*“The 20% renewables target is an ambitious goal ...*

*by 2020, on the basis of existing policies, renewables would contribute around 5% of the UK’s consumption*

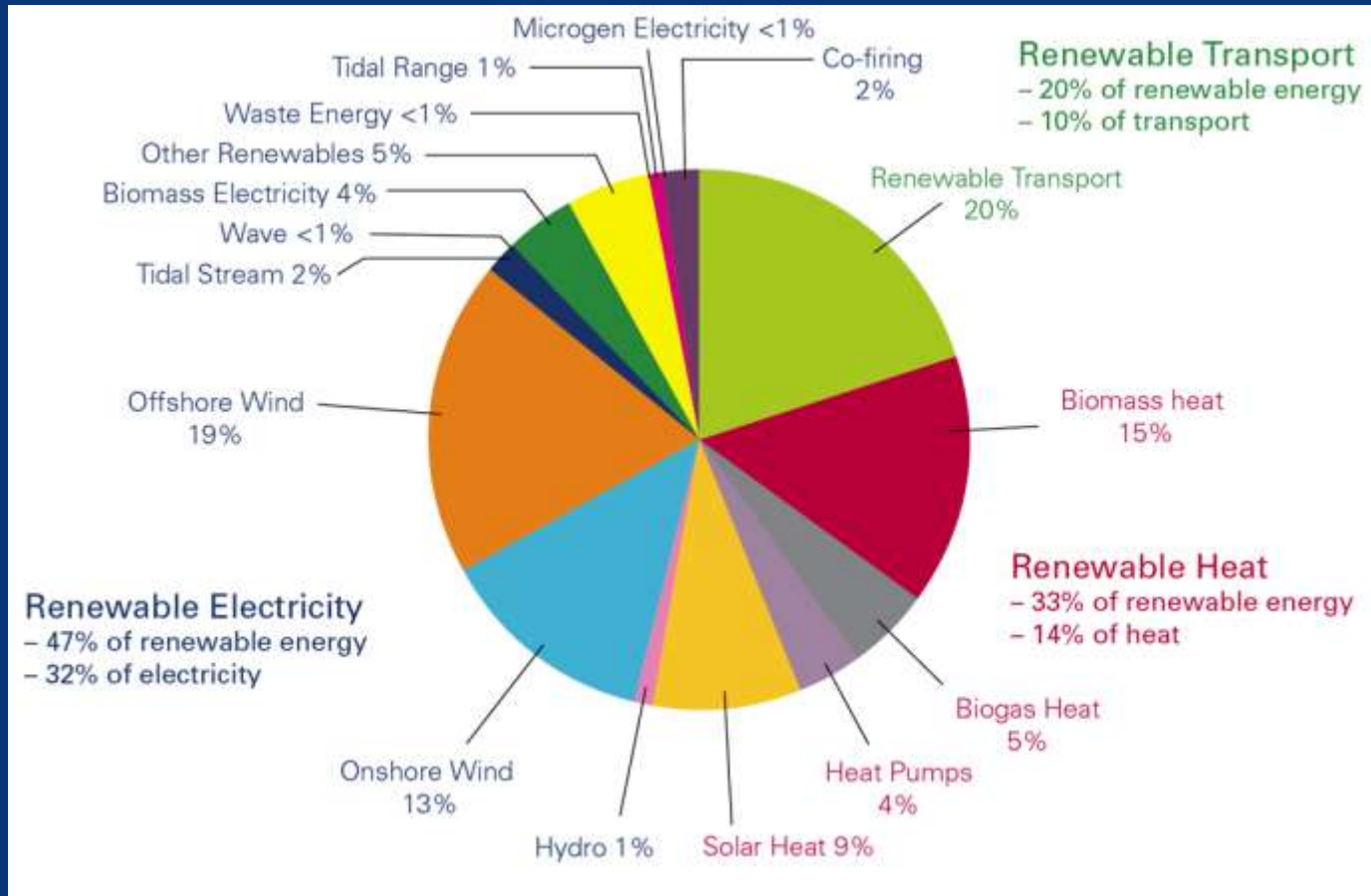
*...*

*we will bring forward the appropriate measures, beyond those set out in this White Paper, to make our contribution to meeting these targets.”*

## Renewable Energy Strategy (RES) 2008



# DECC scenario for 2020



# European PV market growth

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Belgium	2	18	48	100
Czech Republic	0	3	51	80
France	10.6	31.3	46	250
Germany	830	1,135	1,500	2,000
Italy	12.5	70.2	258	400
<b>UK</b>	<b>3.2</b>	<b>4</b>	<b>6</b>	<b>6?</b>

*Annual installed capacities (MWp) in selected European countries (source IEA and EPIA)*



An aerial photograph showing a row of modern, multi-story residential buildings with light-colored wood and stone facades. The roofs are covered with dark solar panels. In the background, there is a large green field, a brown field, and several high-voltage power line towers under a clear blue sky.

# UK policy development

# Existing policies

## Renewables in buildings

- ▲ Zero carbon new homes from 2016
  - > Building regulations: CSH<sup>4</sup> level 6 from 2016
- ▲ CERT<sup>5</sup> extended to 'micro-renewables'
- ▲ Positive planning – 'Merton Rule'<sup>6</sup>
- ▲ Encourage renewables in existing houses
  - > Energy certificates in home info packs

4 *Code for Sustainable Homes – Level 6 is 'zero carbon'*

5 *Carbon Emission Reduction Target (formerly EEC)*

6 *Larger developments require [10%] renewable energy*

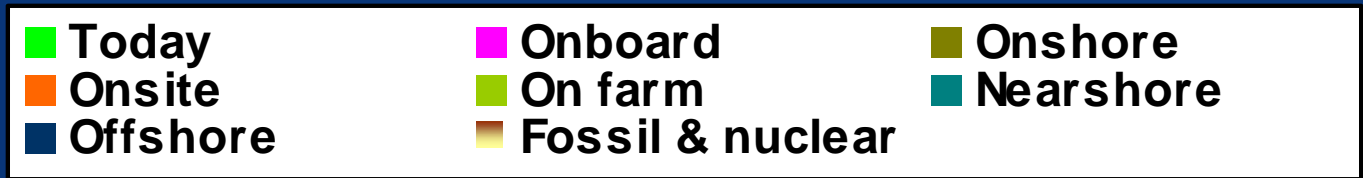
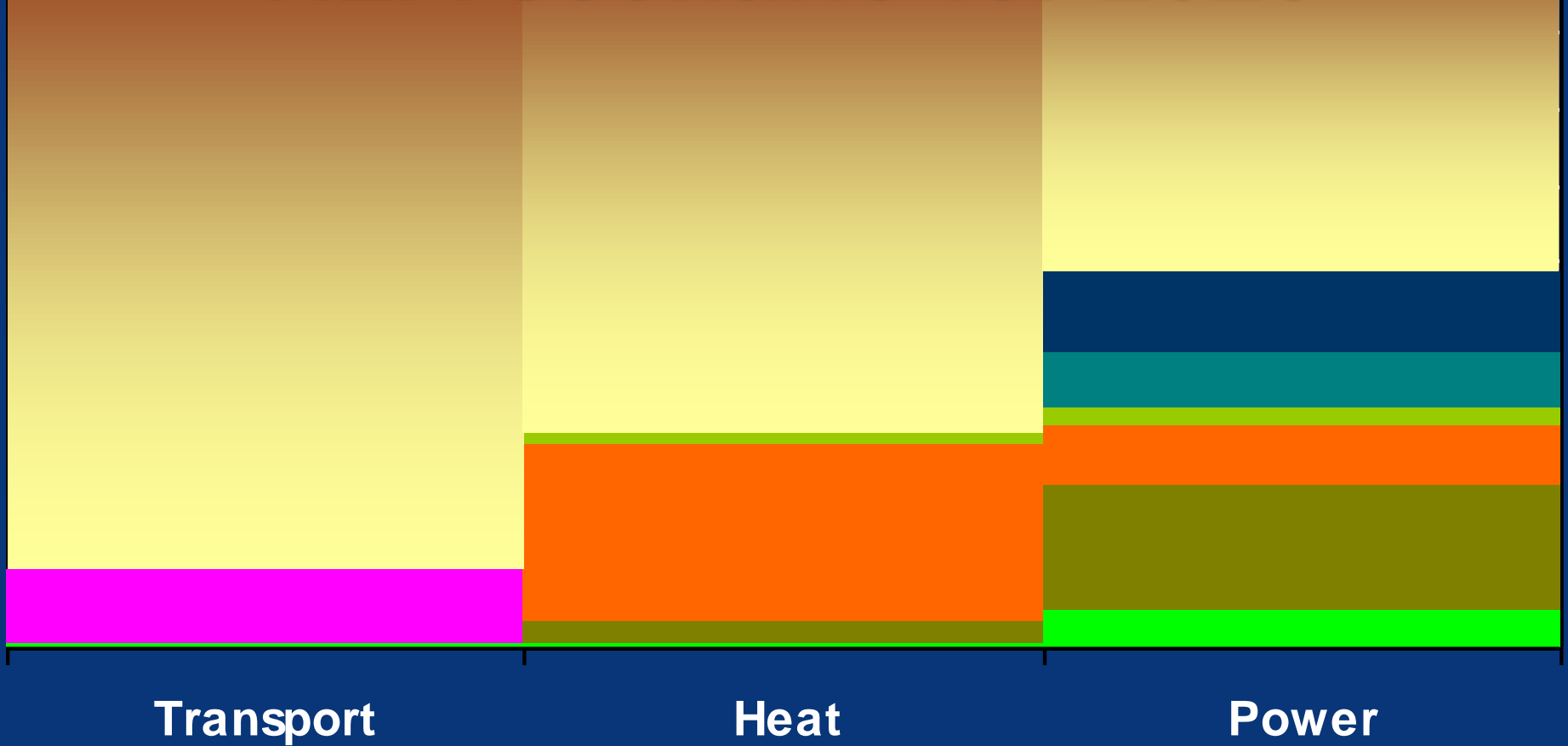
# Future policies

## Residential buildings

- ▲ Building regulations for new homes
  - > CSH<sup>4</sup> level 3 from 2010, level 4 from 2013
- ▲ Heat & energy saving strategy
  - > Upgrade 7m homes by 2020
- ▲ Upgrading existing buildings
  - > Renewable electricity tariffs
  - > Renewable heat tariffs



# REA scenario for 2020

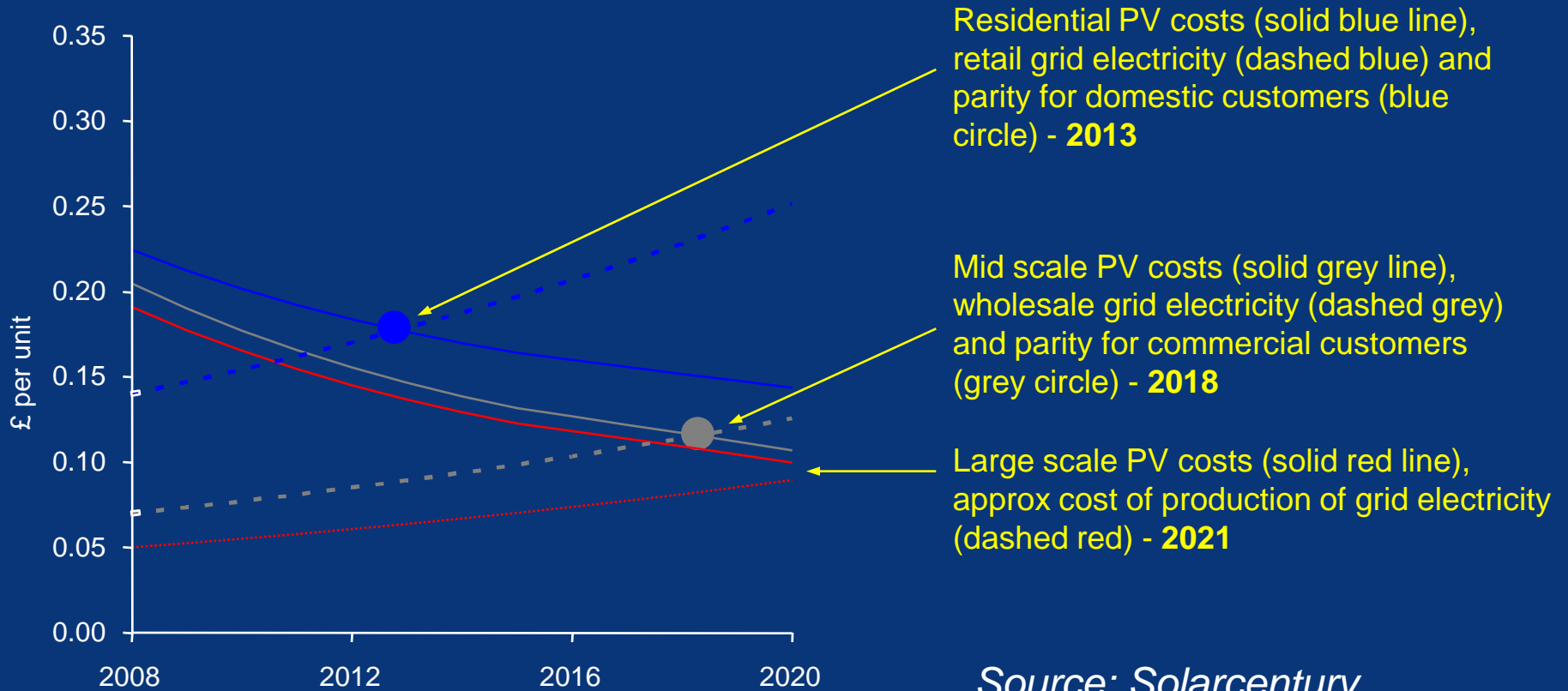


# PV in on-site energy

- ▲ On-site electricity options:
  - > Micro-wind – where suitable
  - > Micro-hydro – where available
  - > Bio-energy CHP – where fuel available
  - > Photovoltaics – where the sun shines
- ▲ Comparative cost
- ▲ Building-integration

# Grid parity

Parity curves – conservative cost scenario:  
Residential, Commercial, **Grid scale**





# Renewable electricity tariffs

A photograph of a row of modern, two-story houses with dark grey or black facades and white window frames. The houses are set on a green lawn under a clear blue sky. The central house in the foreground has a large array of solar panels installed on its dark tiled roof. To the left, another house is partially visible, also featuring solar panels. The overall scene is bright and sunny, suggesting a clear day.

# Renewable energy tariffs

- ▲ Electricity (under 5MW); Heat + biogas
- ▲ Start in April 2010 and April 2011
- ▲ Production tariffs (reward total output)
- ▲ Fixed p/kWh depending on technology
- ▲ Paid through the energy companies
  - > but passed on to consumers

# Preliminary

Key principles

Making it work for consumers

Energy suppliers – raising the levies

Technology classifications

> Heat, electricity, biomethane

Tariff levels

> Heat, electricity, CHP, biomethane

Annexes

> Glossary, Terraced tariffs,  
Modelling, Acknowledgements etc.

Preliminary recommendations



Renewable electricity tariffs

(*'Feed-in tariffs for small scale generation of electricity'*)

Renewable heat tariffs

(*'Renewable heat incentive'*)

Preliminary recommendations on their implementation  
from the renewable energy industry

Output from working groups and industry input co-ordinated by the



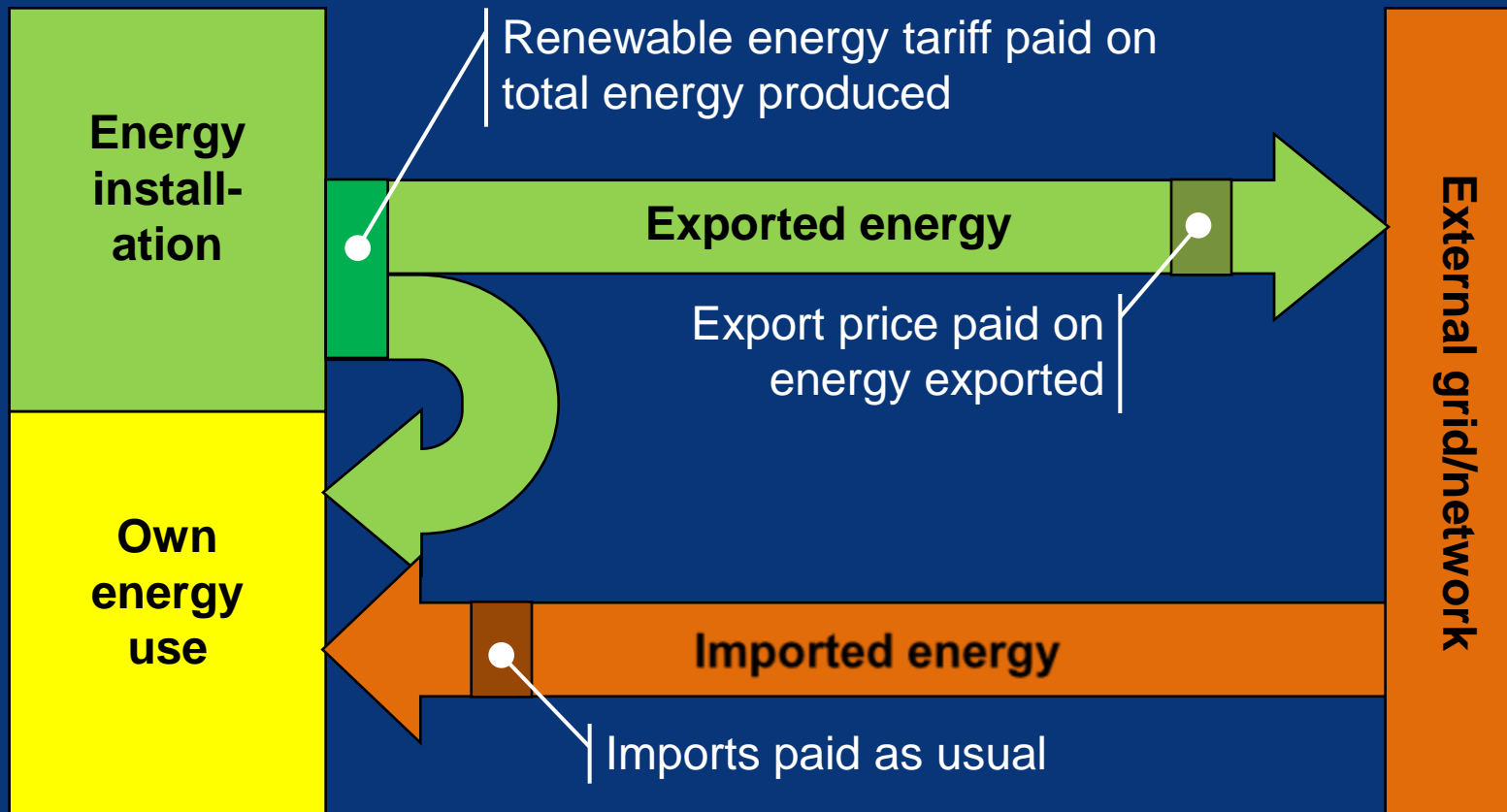
Full document on the website at <http://www.r-e-a.net/policy/REA-policy/RET/common/BluePrint>



# Key principles

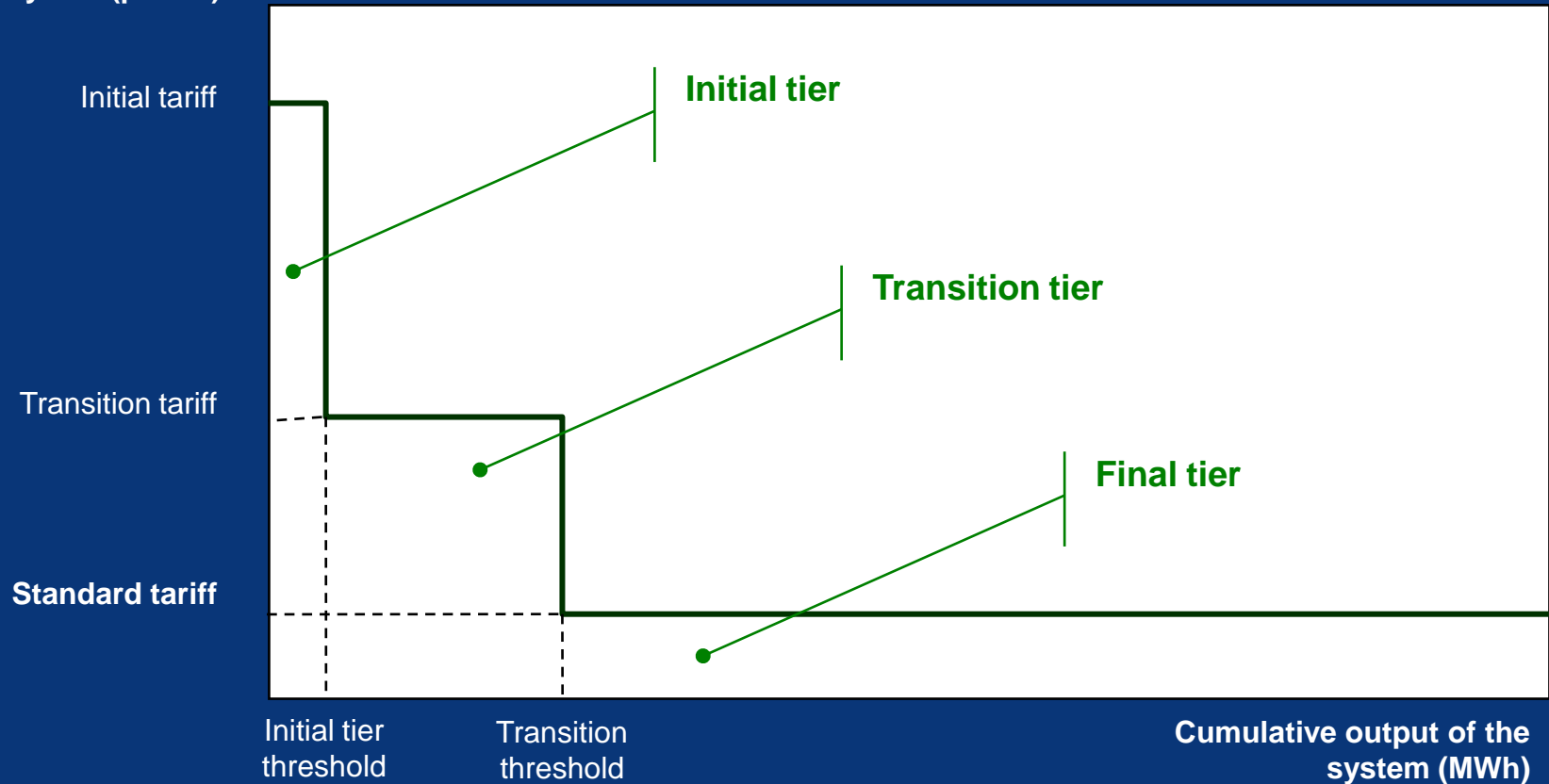
- ▲ For energy users, not professionals
- ▲ Internally and externally consistent
- ▲ Main aim to contribute to renewables targets
- ▲ At 'generous' end of the spectrum initially
- ▲ Reward only useful energy output
- ▲ Meter wherever viable; else deem
- ▲ Pre-capitalisation external not internal
- ▲ Eligible for zero carbon buildings, CRC etc.

# Tariff model

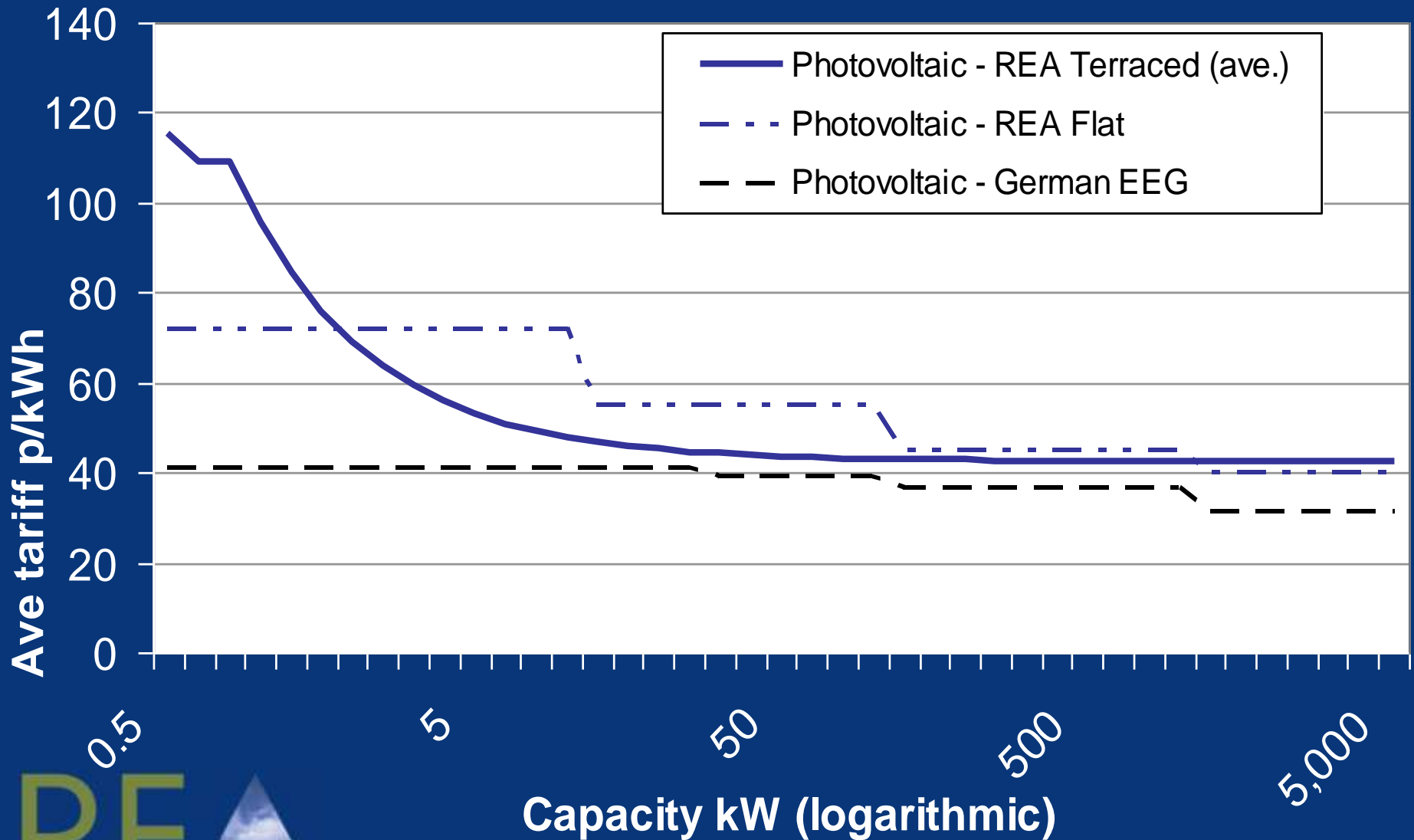


# Terraced tariffs

Tariff payable (p/kWh)



# Terraced tariff example





# DECC Electricity tariff timetable

- ▲ Consultation summer 2009
  - > Scheme design and structure
  - > Proposed tariff levels
- ▲ Licence modification discussions / consultation  
Autumn 2009
  - > Supply and distribution licences and codes
- ▲ Parliamentary process for licence modifications  
late 2009 / early 2010
- ▲ Implementation April 2010

# [REA] But before all that ...

## Avoid hiatus

- > Fill the post-LCBP funding gap
- > Announce now which projects will be eligible

## Implement as soon as possible

- > 'Roughly right rapidly' – don't aim for perfection
- > Heat and electricity tariffs together in 2010

**New  
event  
for  
energy  
users**



PVSAT, Wrexham,

The  
**SMARTENERGY**  
Show



**CONFERENCE & EXHIBITION**  
Wembley Stadium  
1 & 2 December 2009

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