

# Renewable energy solutions for sustainable communities



*Philip Wolfe*

Renewable Energy Association

# This presentation

- ▲ EU Council commitments
  - > What might 20% renewables look like
- ▲ Renewables in construction
  - > Regulatory and policy drivers
  - > Some renewable energy options
  - > How to make it work for you

# The EU commitments for 2020

 Emissions reductions Binding

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

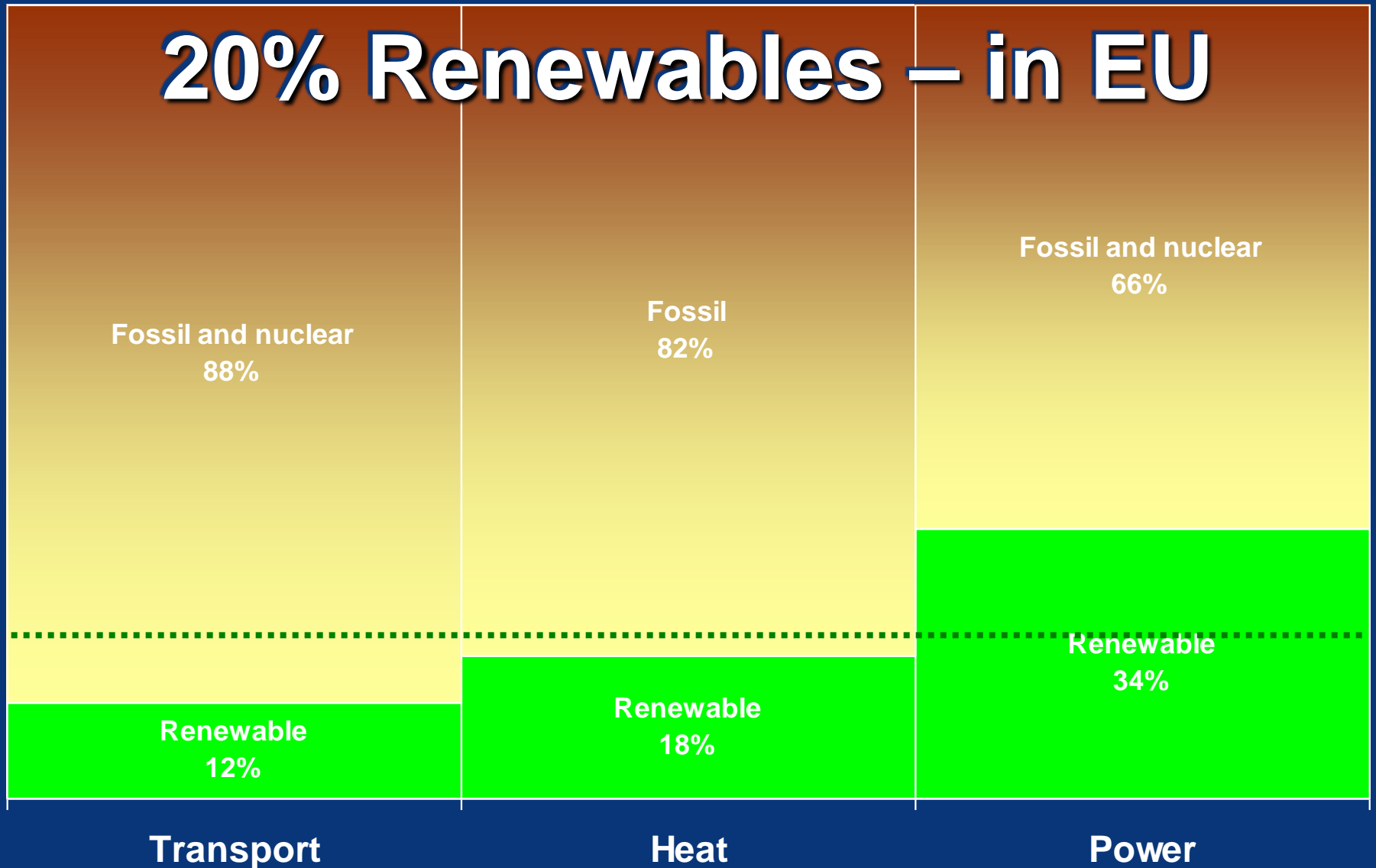
 Energy conservation Non-binding

- > 20% below current projections

 Renewables Binding

- > 20% of total energy
- > 10% of transport fuels

# 20% Renewables – in EU



# First: Cut energy consumption

- ▲ Energy conservation measures
- ▲ More efficient energy usage
  - > Regulate against inefficient products
  - > Regulate against parasitic loads
- ▲ More efficient energy generation
  - > Limit generating stations' waste energy
- ▲ UK consumption in 2020 same as now  
as a rough working assumption

# Energy White Paper

*“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.”*

HM Government



dti

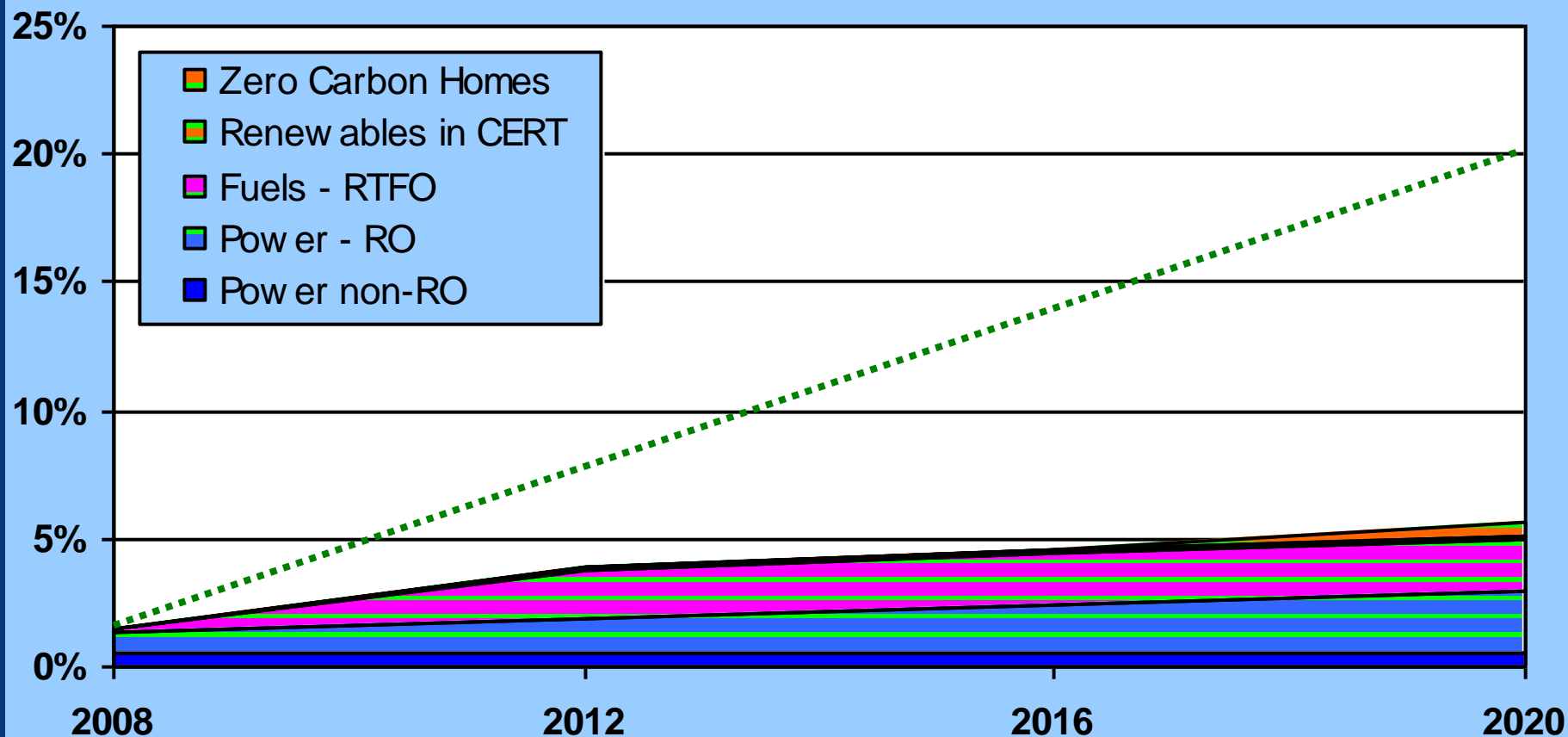
MEETING THE ENERGY CHALLENGE

A White Paper on Energy

MAY 2007

# Routemap to 2020

## Existing plans



# Existing policies and assumptions

## Centralised power & fuels

### Merchant power

- > Banded RO<sup>1</sup> achieves ~15% of electricity
- > Planning & grid restrictions overcome
  - > All energy planning to IPC<sup>2</sup>

### Transport fuels

- > RTFO<sup>3</sup> introduced and effective
- > Bio-fuel duty rebates remain in interim

1 *Renewable (electricity) Obligation*

2 *Independent Planning Commission*

3 *Renewable Transport Fuels Obligation*



# Existing policies and assumptions

## On-site renewables

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

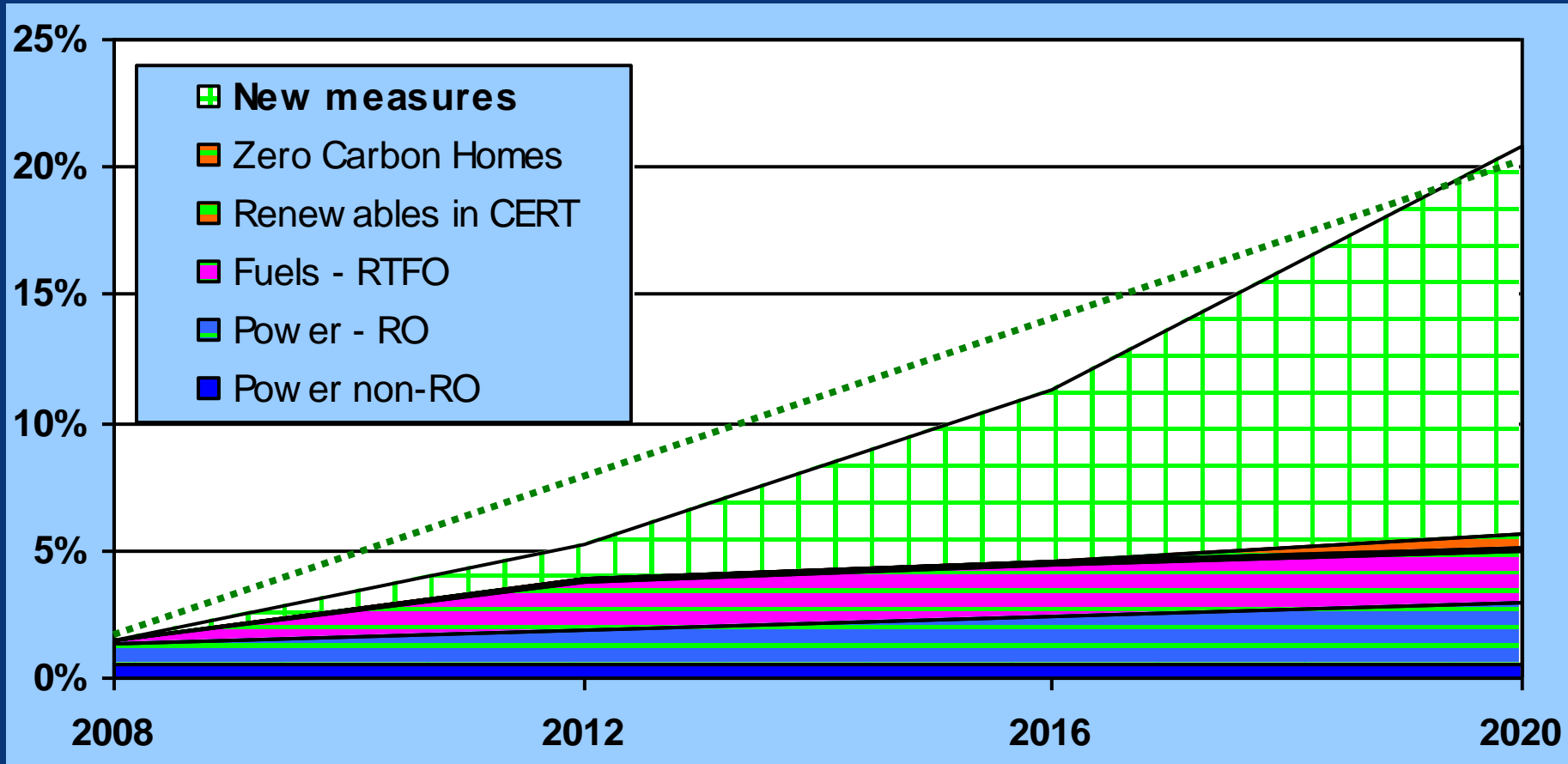
4 *Code for Sustainable Homes – Level 6 is 'zero carbon'*

5 *Carbon Emission Reduction Target (formerly EEC)*

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

# Routemap to 2020

## New measures needed



# Enhanced policy proposals

## Centralised power & fuels

### Merchant power and heat

- > Increased RO<sup>1</sup> objective ~22% in 2020
- > Tidal lagoons, barrages & new large hydro?
- > Incentives for large scale heat and CHP<sup>7</sup>
- > Measures to deliver biomass strategy

### Transport fuels

- > Higher RTFO<sup>3</sup> quotas – 13% (by volume) in 2020
- > Availability of high blend fuels
- > Second generation bio-fuels
- > Incentives for high blend and flex-fuel vehicles

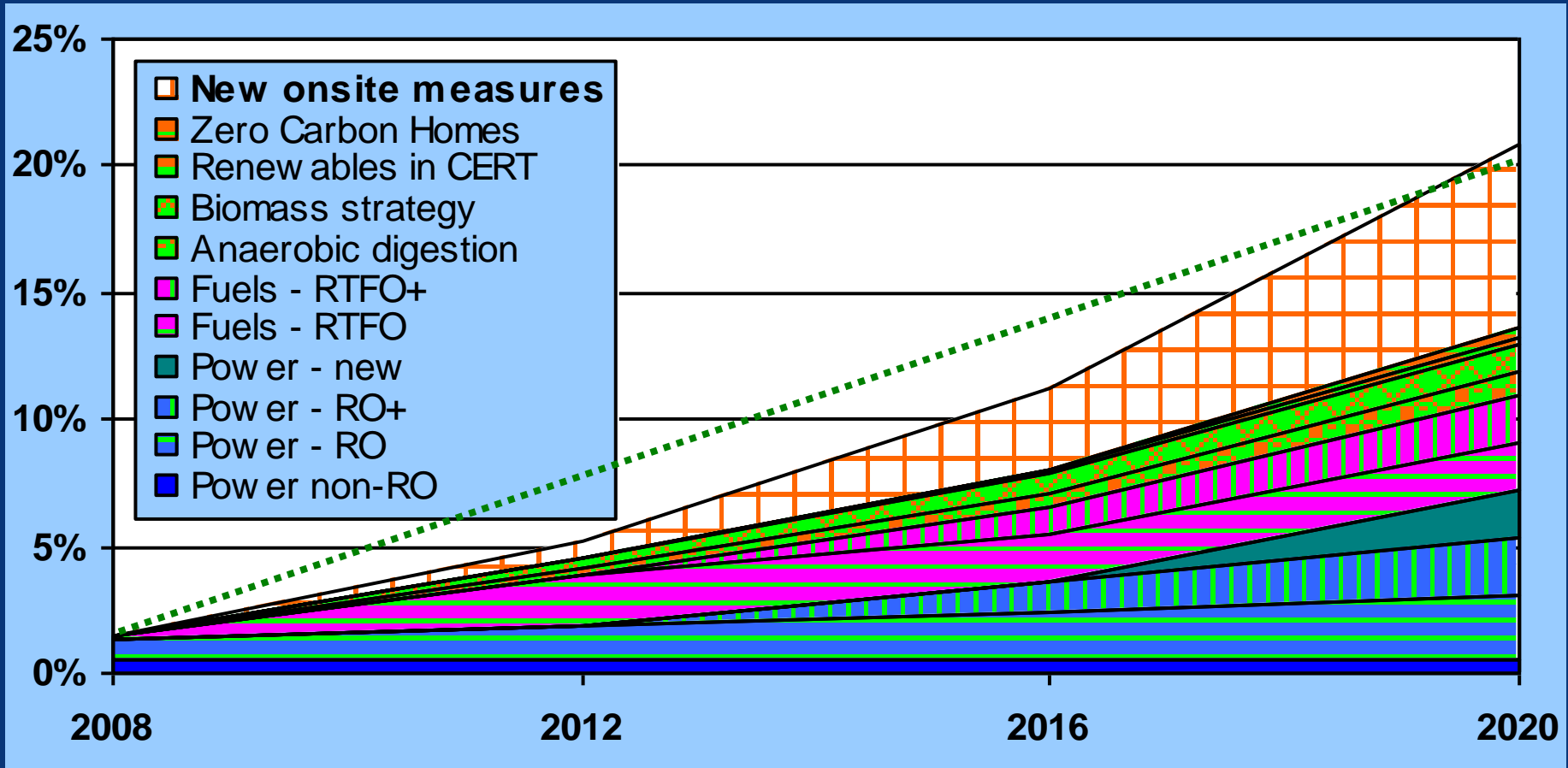
1. *Renewable (electricity) Obligation*

3 *Renewable Transport Fuels Obligation*

7 *Combined heat and power*

# Routemap to 2020

## New on-site measures needed



# Enhanced policy proposals

## On-site domestic

- ▲ Building regulations for new homes
  - > CSH<sup>4</sup> level 4 from 2010, level 5 from 2013
- ▲ Smart metering roll-out programme
- ▲ Retrofit programme for existing houses
  - > 100,000 rising to 1,000,000 per annum
  - > Owner occupiers and private landlords:
    - > Feed-in tariffs for electricity; similar for heat
    - > Stamp duty breaks, council tax concessions
    - > Financing measures, mortgages and loans
  - > Social rented and fuel poor:
    - > Through local authorities and housing associations

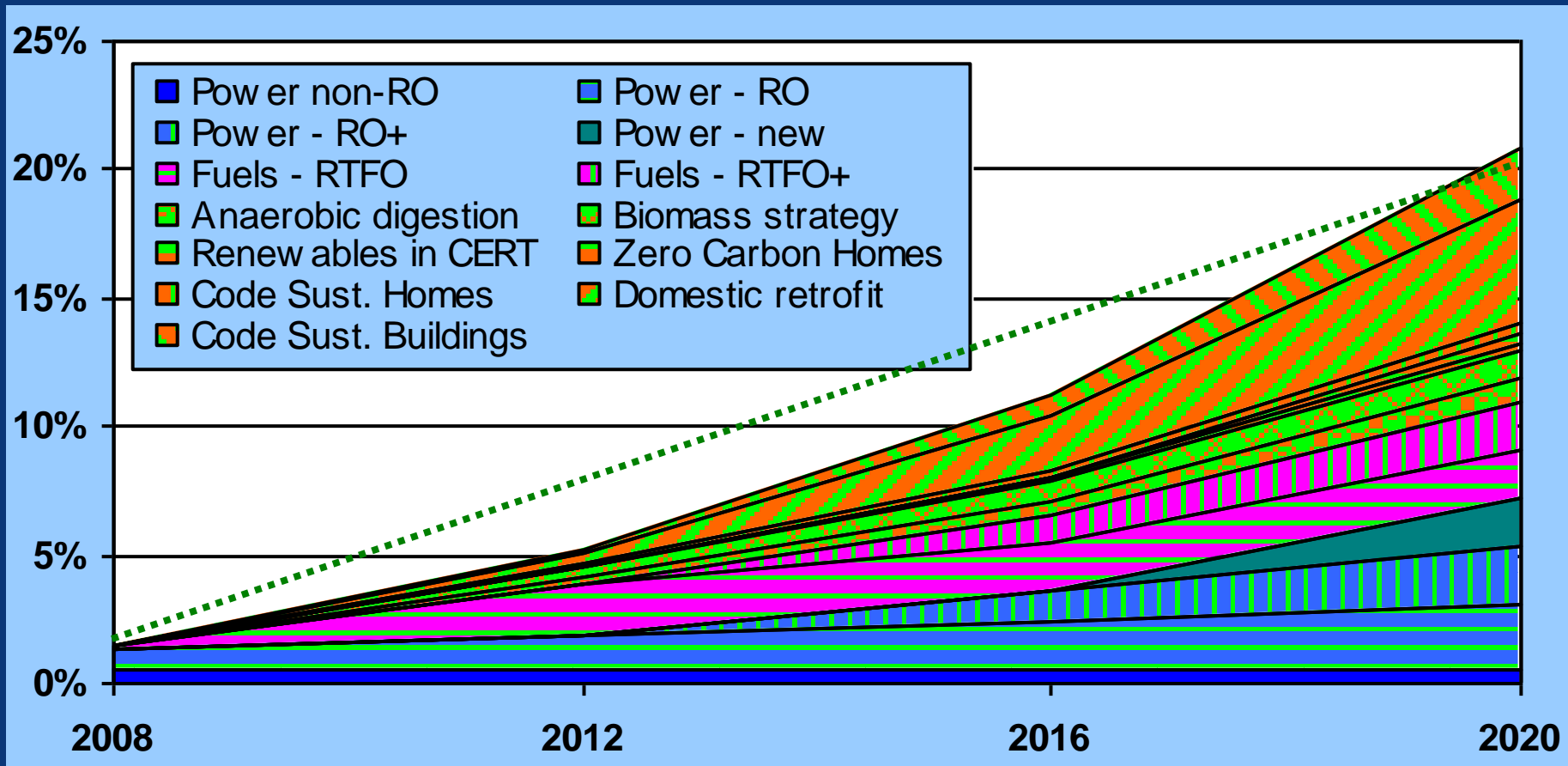
# Enhanced policy proposals

## On-site non-residential

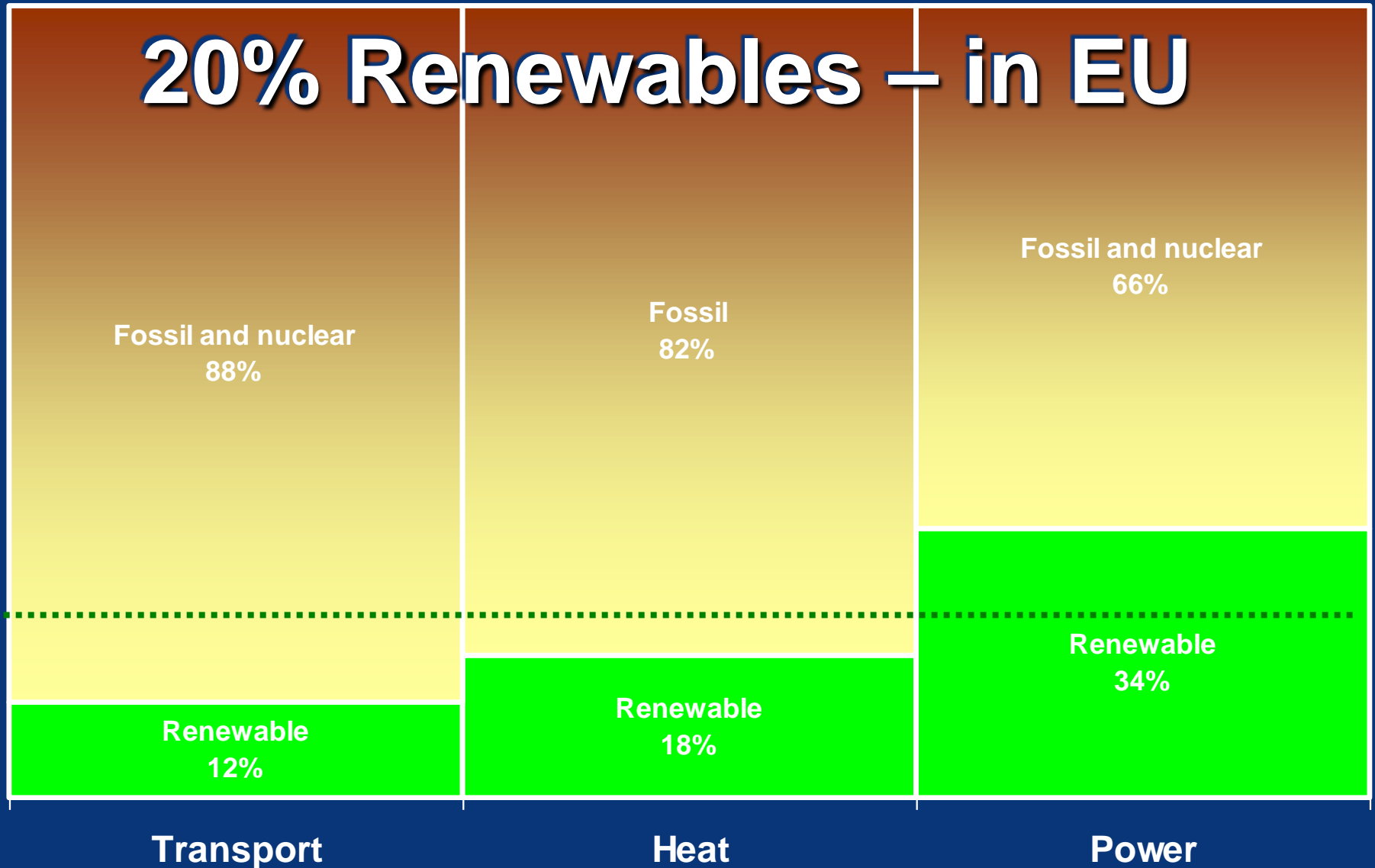
- ▲ A new Code for Sustainable Buildings
  - > Equivalent to CSH<sup>4</sup> – and in Building Regs
- ▲ Heat networks in new developments
  - > Regulatory system for heat networks
- ▲ Positive planning
  - > Progressively rising ‘Merton Rule’<sup>6</sup> %s
- ▲ Renewables in agriculture
  - > Anaerobic digestion on 000’s of farms

# Routemap to 2020

## Enhanced energy policy



# 20% Renewables – in EU



Transport

Heat

Power



# 20% Renewables – in UK

## Where it is

90%

72%

51%

- Onboard
- On farm
- Nearshore
- Fossil & nuclear
- Onsite
- Onshore
- Offshore

10%

3%

23%

2%

11%

7%

16%

2%

12%

Transport

Heat

Power

# Drivers for on-site renewables

## National incentives and regulation

- > Building Regulations
- > Planning Policy
- > CERT, LCBP etc
- > Fiscal measures: stamp duty concessions etc
- > Energy Performance Certificates

## Local regulation

- > Merton Rule and similar

## Customers

- > 'Green consumers'
- > Corporate social responsibility
- > Price

# Renewable options in construction

- ▲ On-site, district & community heat
  - > Solar thermal
  - > Biomass and pellet boilers, bio-fuel boilers
  - > Ground- and air-source heat pumps
- ▲ On-site electricity
  - > Photovoltaics
  - > 'Micro' wind
- ▲ Combined heat and power
  - > Biomass [and gas-fired] CHP, [fuel cells]
- ▲ Off-site renewables
  - > Offsetting

# How to make it work for you

## On-site renewables

- > Just another construction product
- > Design and performance specifications
- > Contracts and warranties
- > Product and supplier certification

## Off-site renewables

- > Available as a 'last resort'

# Renewable energy solutions for sustainable communities



*Philip Wolfe*

Renewable Energy Association