**FLAME CONFERENCE 2019** 

# Transitions & New Technology THE CARBON CRUNCH

**DIETER HELM** 

PROF OF ECONOMIC POLICY, UNIVERSITY OF OXFORD

#### AGENDA

THE NET ZERO & THE NEW POLITICS OF CLIMATE CHANGE IN EUROPE

NET ZERO IN THE REST OF THE WORLD

30 WASTED YEARS - WHAT HAS HAPPENED SINCE 1990

THE NEXT 30 YEARS

WHAT SHOULD EUROPE DO?

WHAT WILL EUROPE DO?

#### **NET ZERO IN EUROPE**



EXTINCTION REBELLION Green Parties and the new activism



THE DEMANDS -Net zero by 2025; bypass parliament and democracies



THE EUROPE DIMENSION Net zero by 2050 COAL TO REMAIN UNTIL 2040

## THE REALITY IN EUROPE

GERMANY'S ENERGIEWENDE FAILURES

THE REVOLT ON THE RIGHT

DEINDUSTRIALISATION

CARBON CONSUMPTION VS. US NOT SO GOOD

## **NET ZERO**

#### IN THE REST OF THE WORLD

THE US, TRUMP AND RESHORING

CHINA, 1000GW COAL AND 250 GW

+ LOTS OF OVERSEAS COAL PROJECTS

INDIA AND ITS FOSSIL FUELS

AFRICA, COAL AND CARBON LOSS FROM SOILS AND FORESTS

#### **3BILLION MORE PEOPLE BY 2100**

6-8% ECONOMIC GROWTH = x2 BY 2030; x4 BY 2040; x8 BY 2050



## **30 WASTED YEARS**

1990-2020

#### THE GREAT AGE OF FOSSIL FUELS



### **CARBON SINCE 1000**

# 



**GLOBAL CO2 LEVELS** 

### **CARBON SINCE 1990**



### **GLOBAL COAL CONSUMPTION SINCE 1990**

Global coal consumption,

Million tonnes per year



### **OIL SINCE 1990**

#### Global oil consumption,

Million barrels per day



## **GLOBAL GAS CONSUMPTION SINCE 1990**

Global natural gas consumption,

Billion cubic metres per year



## **PROJECTIONS FOR 2040**

#### **IEA NEW POLICY SCENARIOS**

Global coal consumption forecast<sup>1</sup>,

Million tonnes per year



• Notes: 1) Linear interpolation of 2017 historic and 2025,2030,2035 and 2040 forecast demand data points provided by the IEA for its NPS scenario from the World Energy Outlook 2018

Sources: IEA World Energy Outlook 2018, Aurora Energy Research

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#### QUESTION

WHAT CAN EUROPE DO TO REDUCE *GLOBAL* EMISSIONS, ESPECIALLY IN CHINA, INDIA & AFRICA?

# WHAT SHOULD EUROPE DO?

**QUESTION** WHERE DOES EUROPE HAVE A COMPARATIVE ADVANTAGE?

ANSWER

VERY LARGE R&D BUDGET [AND SOME OFFSHORE WIND & CCS]

UNILATERAL POLICY - CARBON CONSUMPTION BASELINE

DO LEAST HARM - CARBON PRICE

FOCUS ON CARBON PRODUCTION

CARRY ON DE-INDUSTRIALISING

DO LITTLE R&D

CARRY ON PAYING OUT TO RENT SEEKING LOBBYISTS

FACE THE REVOLT ON THE RIGHT

# WHAT WILL EUROPE DO?

#### CONCLUSIONS LEARN THE LESSONS

FROM 30 WASTED YEARS

**BE HONEST ABOUT NET ZERO** 

FOCUS ON THE GLOBAL PROBLEM

USE CARBON CONSUMPTION AS THE BASELINE

INVEST IN THE FUTURE - AND R&D -DIGITALISATION, ELECTRIFICATION AND ZERO MARGINAL COSTS

#### FOR INFORMATION

		C Energy Futures Network Paper 28. Nuclear lessons for energy policy Dieter Helm January 19	C Energy Futures Network Paper 27. A Nuclear RAB Model Dieter Helm June 2018		Energy Futures Network Paper 26. BREXIT – and its implications for the British energy market Dieter Helm April 2018	Image: Constant of Energy Review   Dieter Helm   25th October 2017	
	Peak oil demand and oil prices – a critique, Paper 25. Jan 18				The new normal – oil prices after the crash, Paper 16, Feb 16		
	Why intervention on electricity prices is needed and how to do it without undermining competition, Paper 24, April 17				Stranded Assets – a deceptively simple and flawed idea, Paper 15, Oct 15		
	Not so smart – what has gone wrong with the smart meter programme and how to fix it				Reforming the FiTs and capacity mechanisms, Paper 14, Sep 15		
					The first 100 days of Conservative energy policy, Paper 13, Aug 15		
	Are the electricity price increases justified? Paper 22, Feb 16				Penalty tariffs, open ended regulation and embedding overcharging. Paper 12, Jul 15		
	Energy and climate policy after BREXIT, Paper 21, Oct 16						
Greg Clark's energy agenda, Paper 20, Sep 16			٠	British energy policy- what happens next? Paper 11, Jun 15			
•	Flawed in almost all its parts – the final CMA report on electricity markets, Paper 19, Jul 16			٠	Energy Policy and the Coalition, Paper 10, March 15		
<ul> <li>After Hinkley – how to contract for the rest of the nuclear programme, Paper 18, Apr 16</li> <li>The CMA Energy Market investigation: Companies 5-0 CMA? Paper 17, Mar 16</li> </ul>			•	What should oil companies do about climate change? Paper 9, Feb 15 Competition in the British electricity sector: a set or practical measures. Paper 8, Fe			
				15			

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