

# *Energy transition: where does path dependence lead to?*

**Pr. Patrice Geoffron**

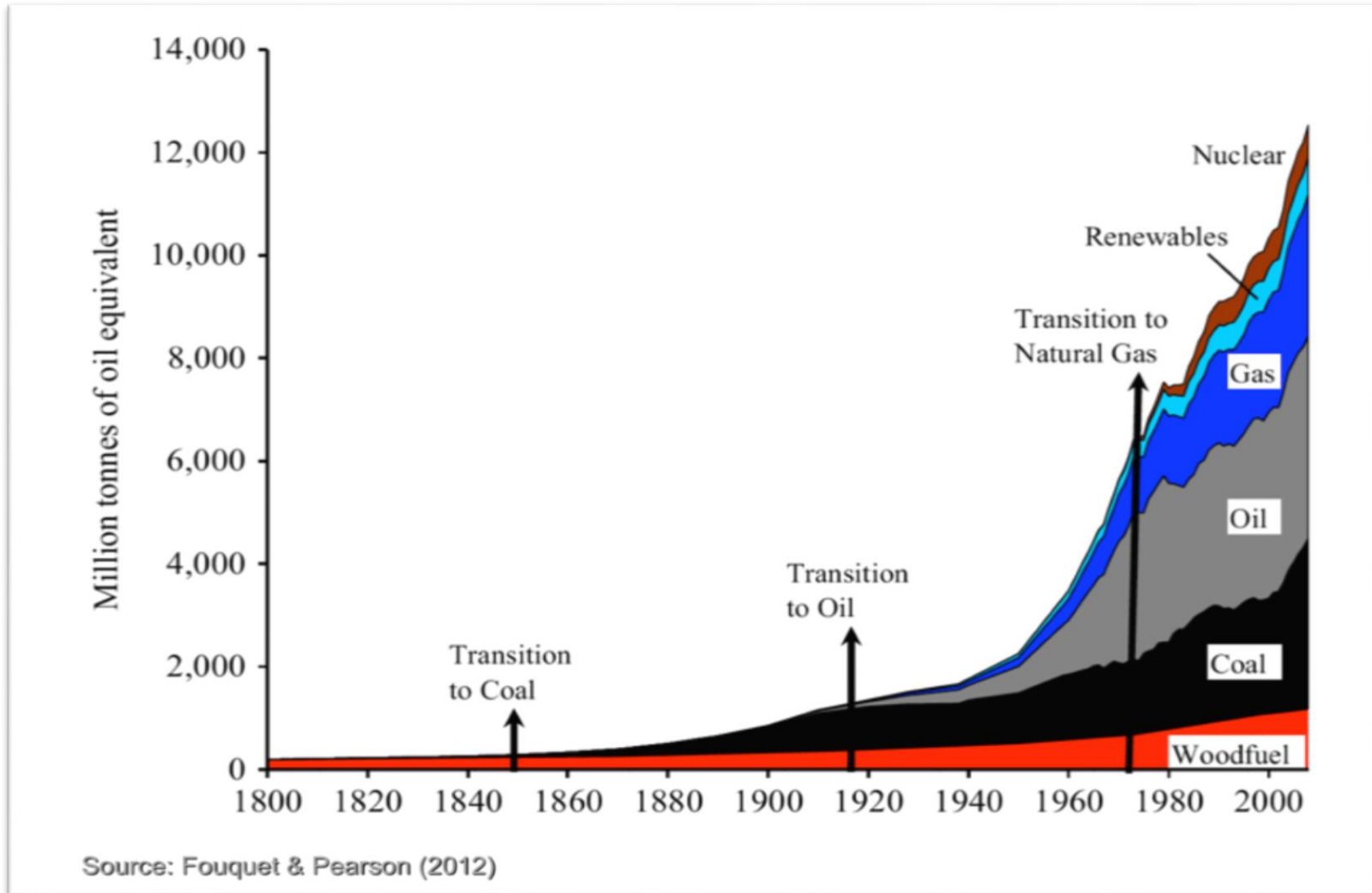
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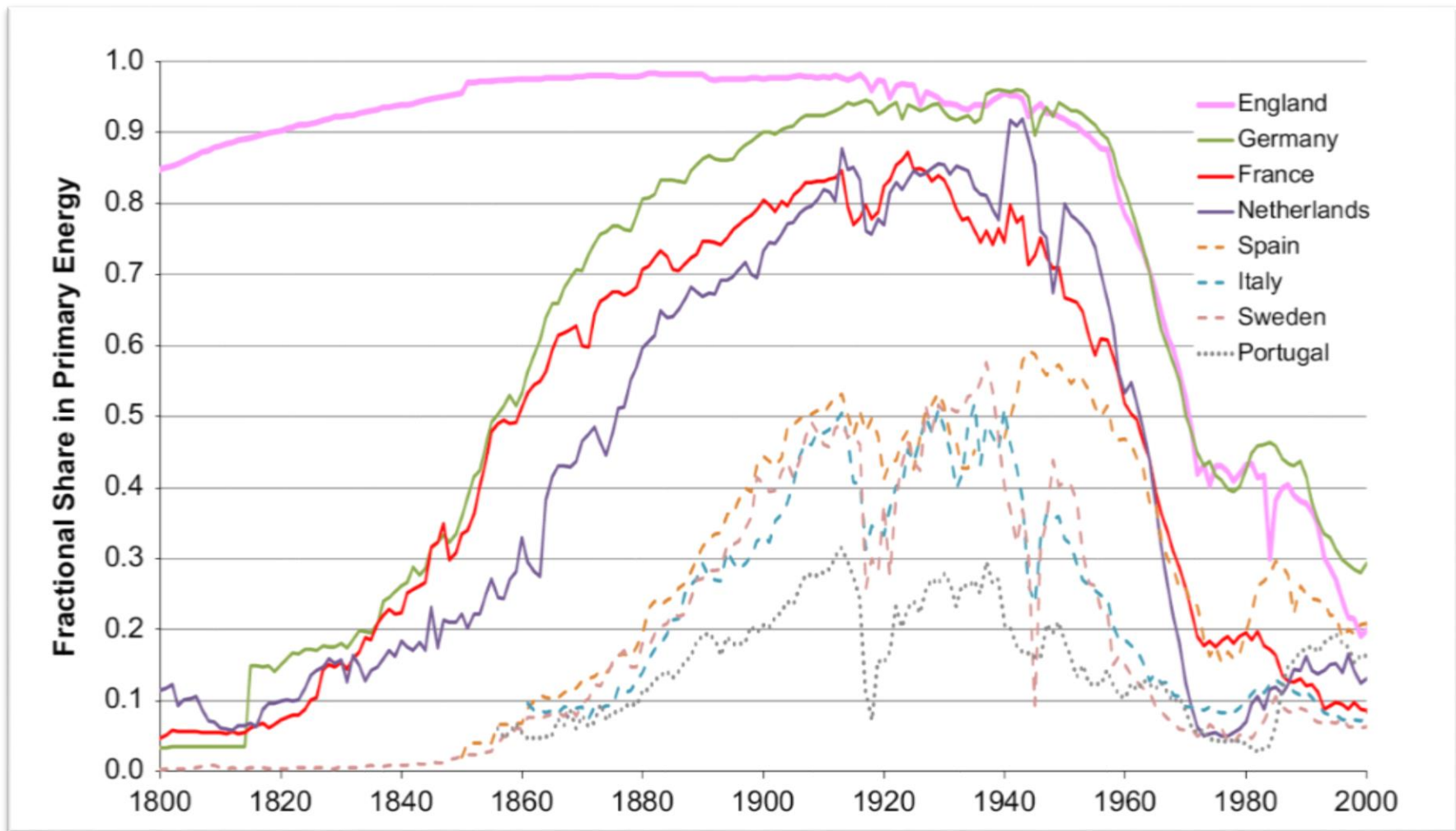
**8<sup>th</sup> European Energy Forum:  
The Cost of European Energy  
Transitions**

11-12 June 2019

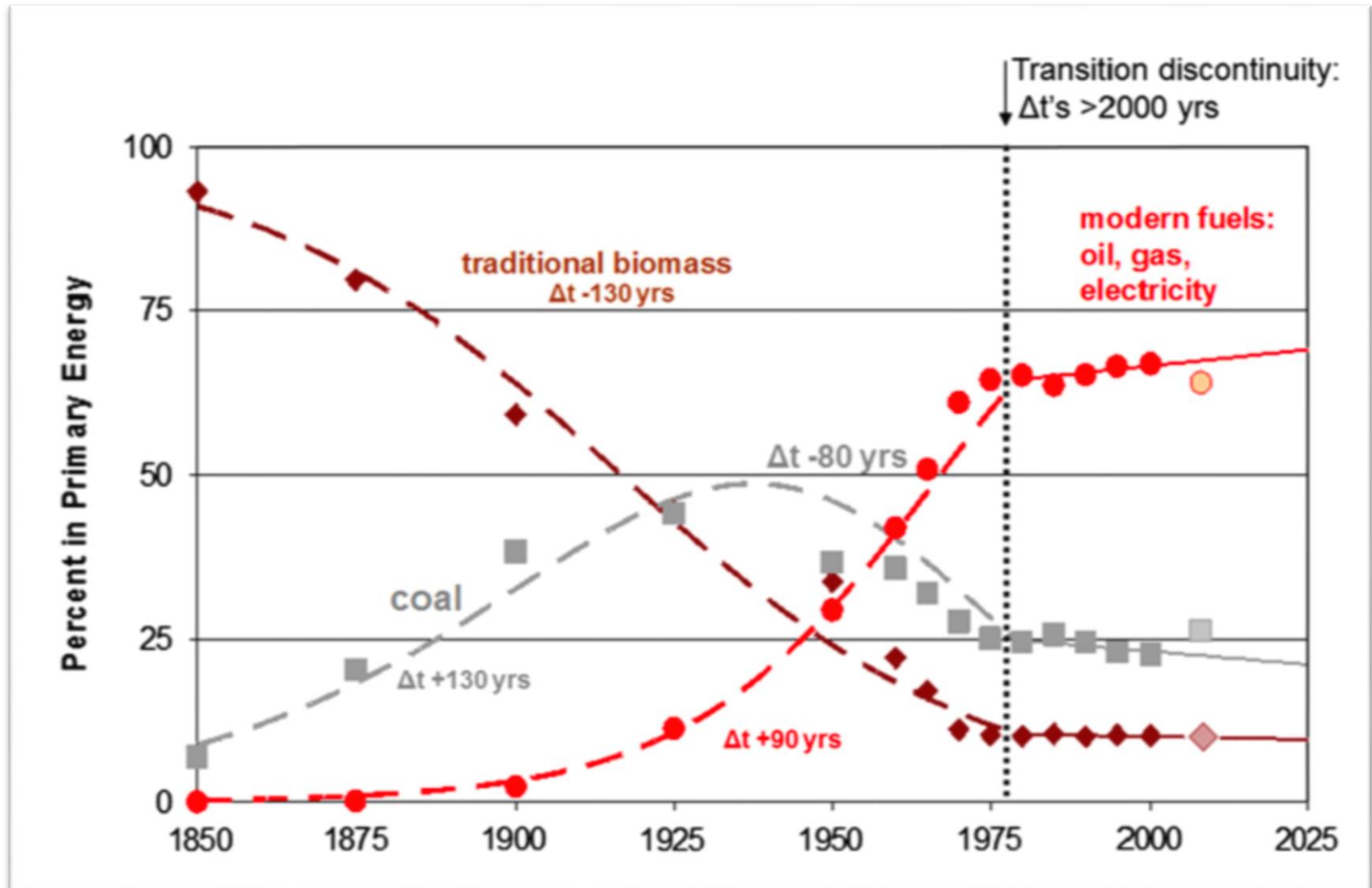
# Historical background on “energy transitions”



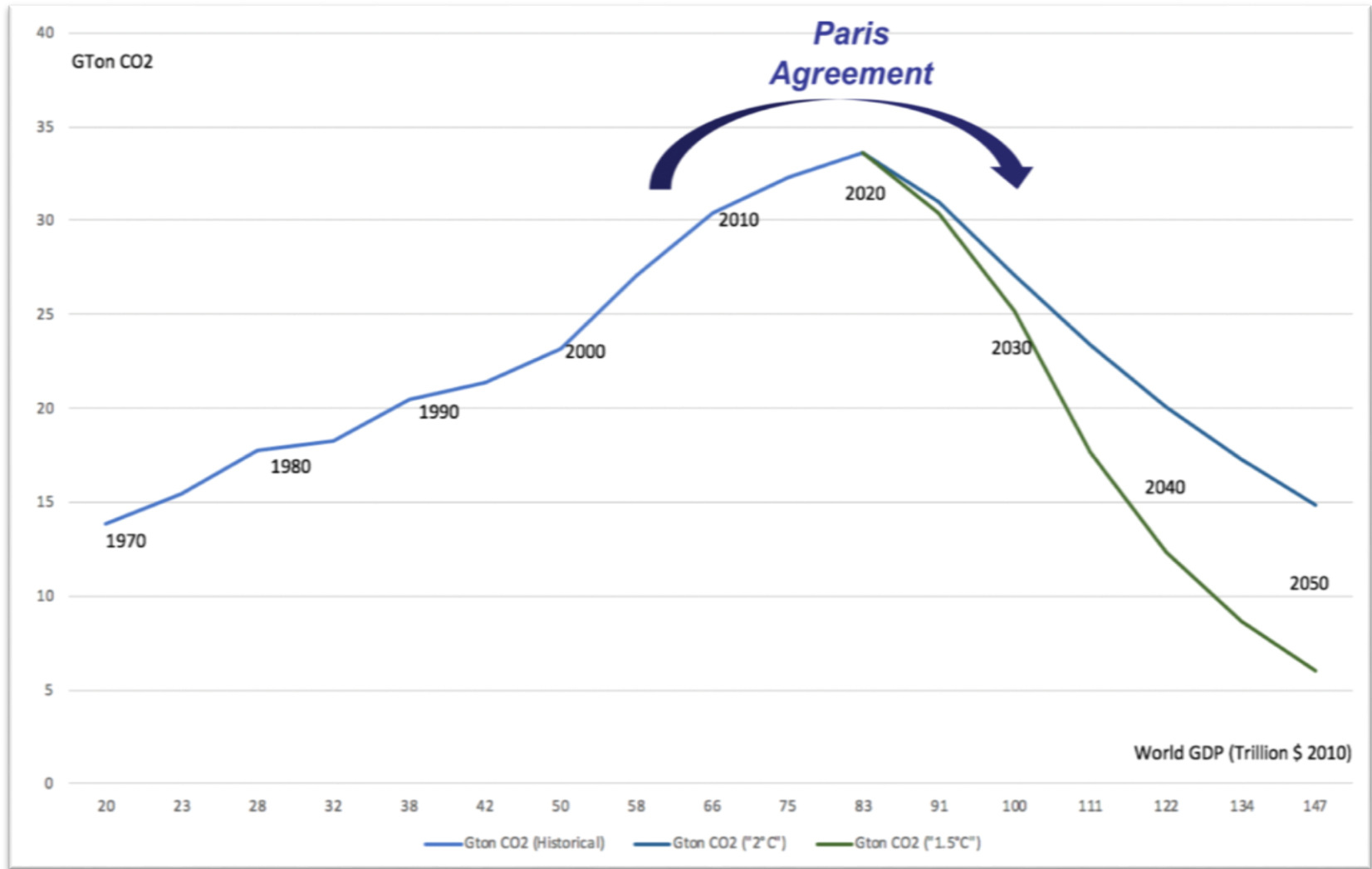
# Coal's share of primary energy in Europe in the 19th and 20th centuries



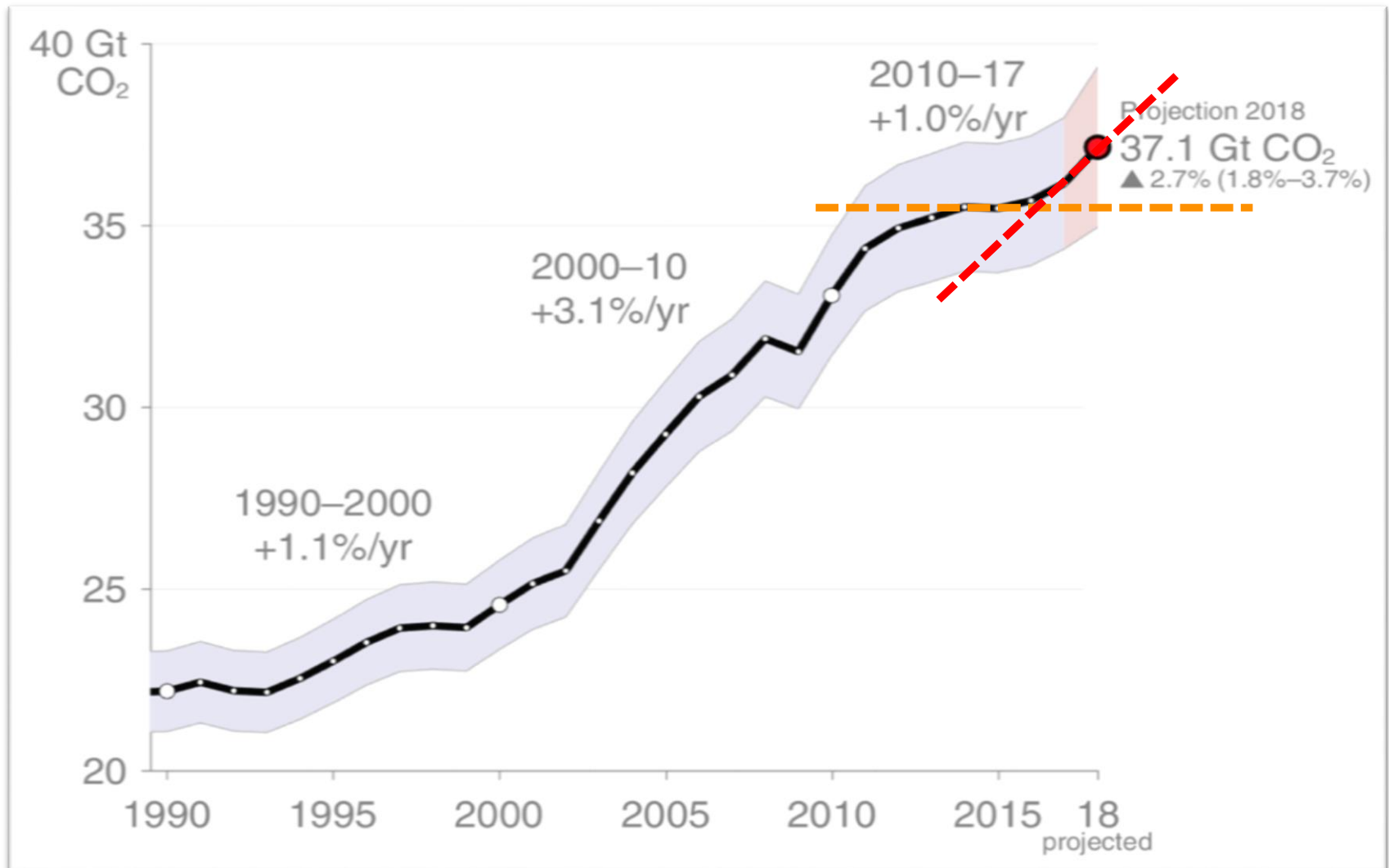
# Historical “transitions” pathways



# What the Paris Agreement would mean from a macroeconomic viewpoint...

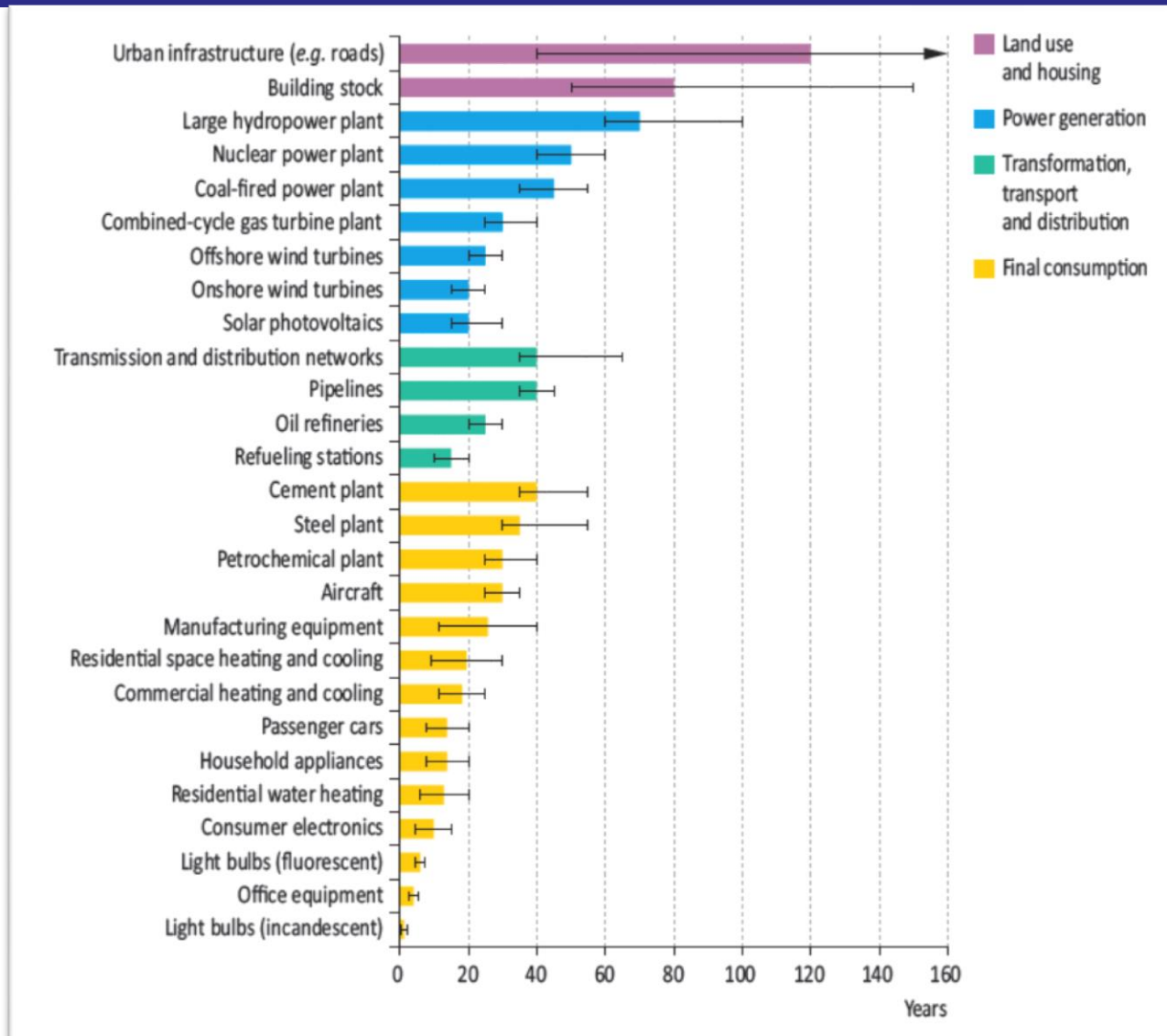


... and where we are presently



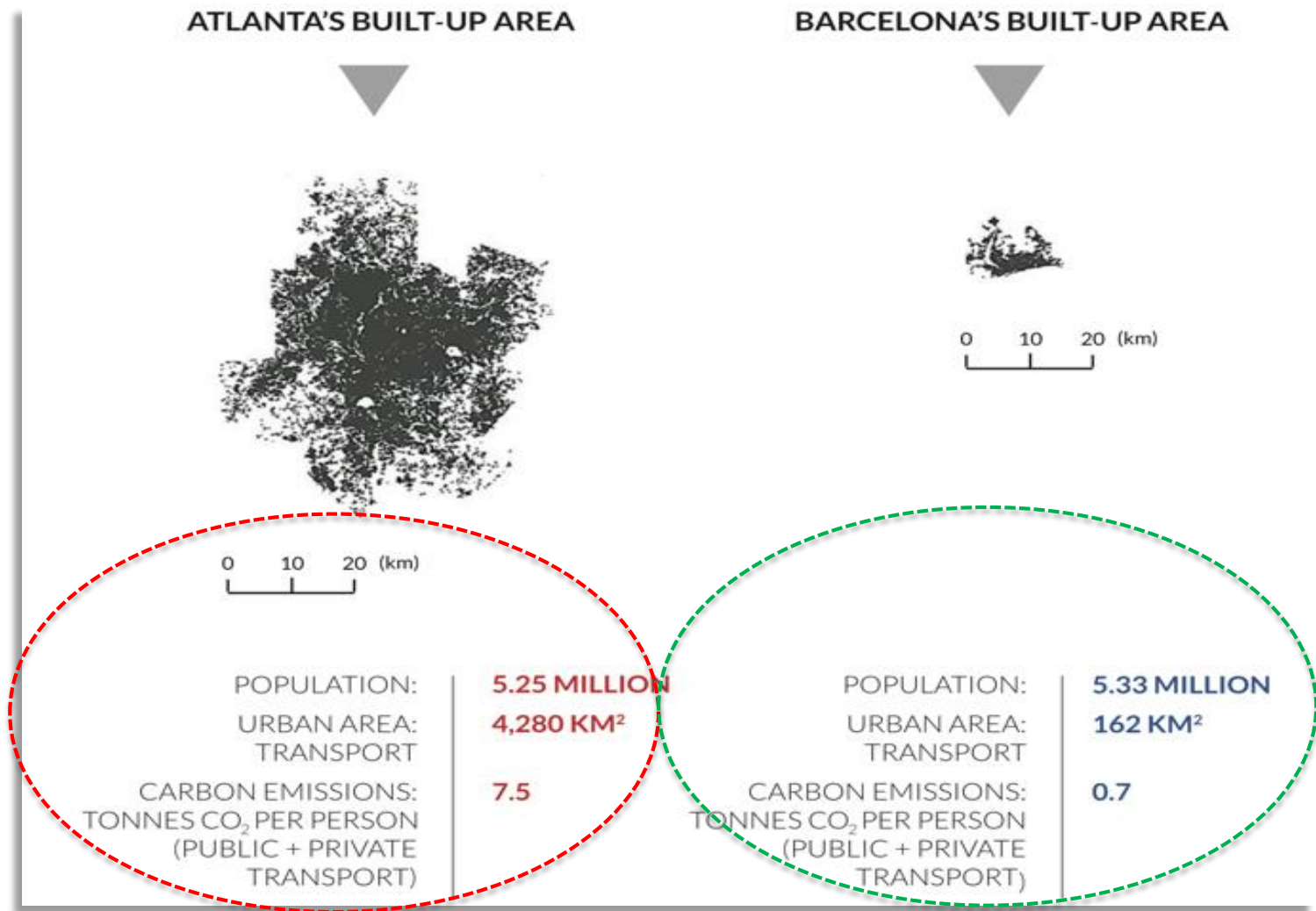
# Understanding path dependence:

## 1. Typical life time of energy-related capital stock



# Understanding path dependence:

## 2. *The urban carbon-footprint*



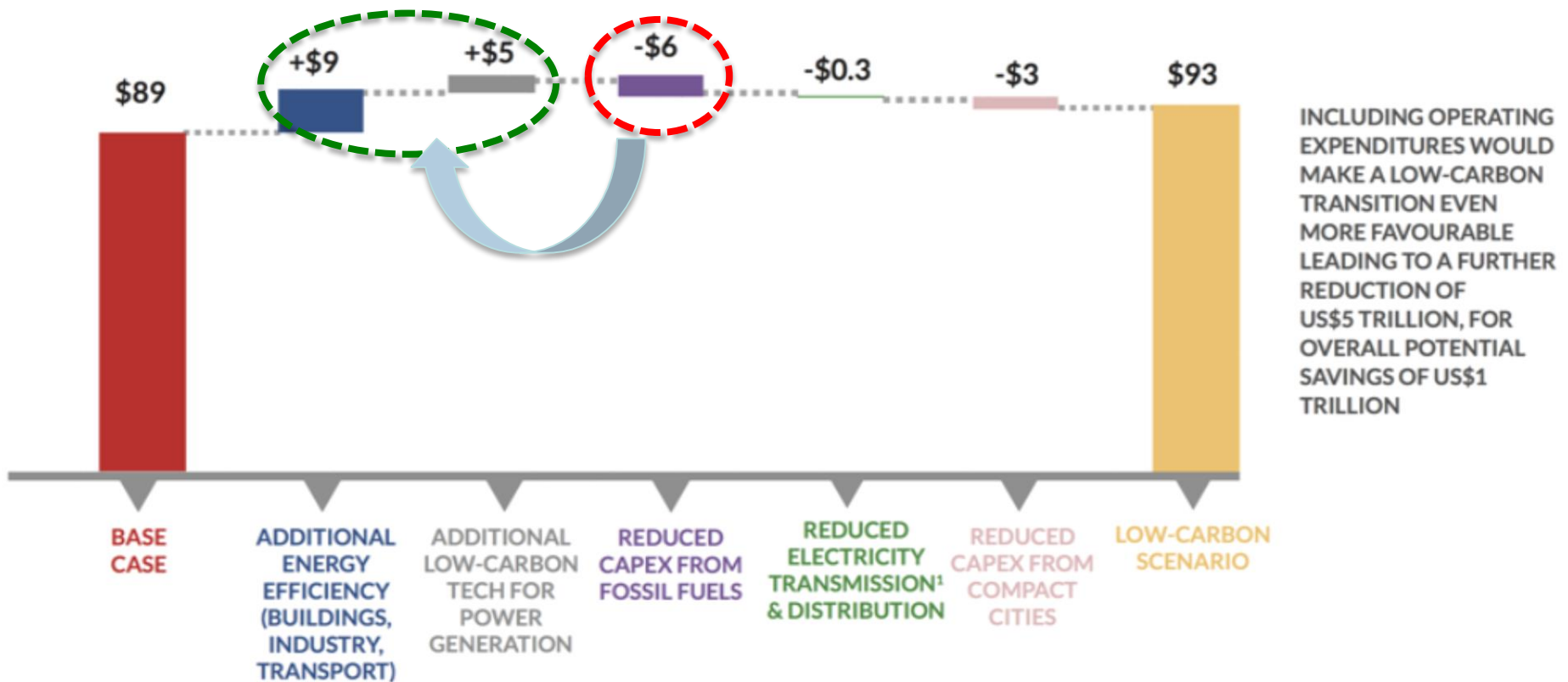


# Understanding path dependence:

## 3. Massive reallocations needed over the medium term

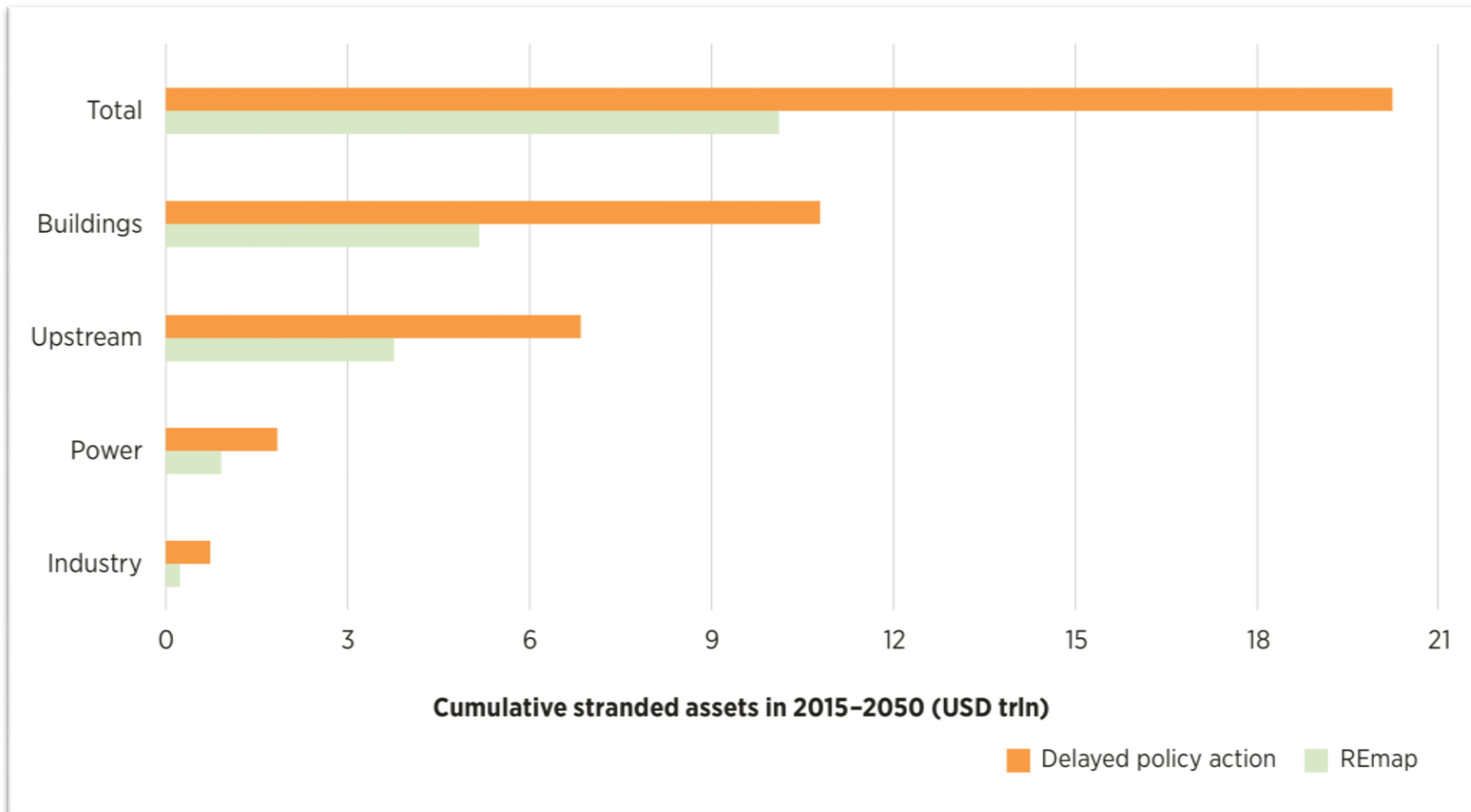
### GLOBAL INVESTMENT REQUIREMENTS, 2015 TO 2030, US\$ TRILLION, CONSTANT 2010 DOLLARS

Indicative figures only  
High rates of uncertainty



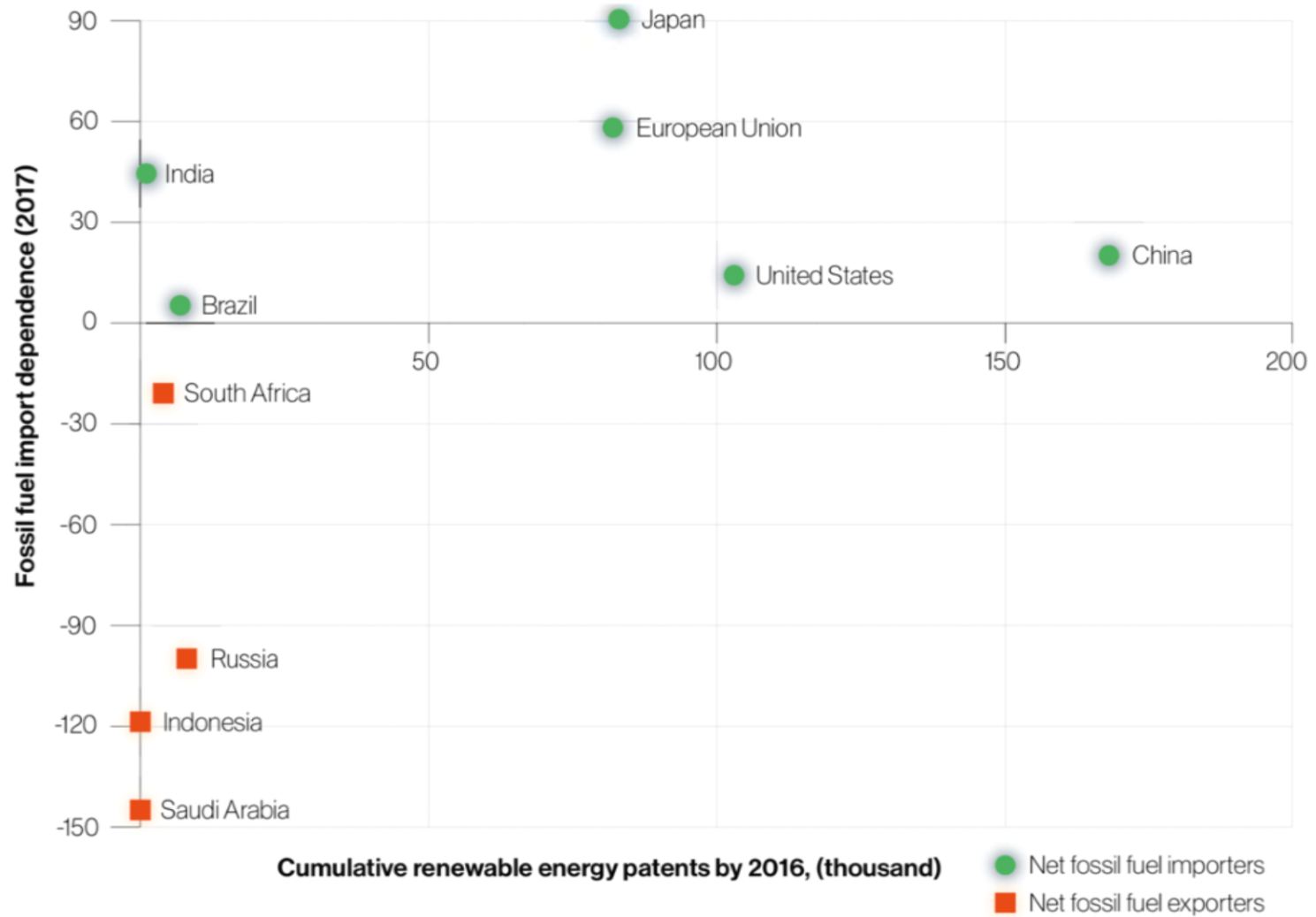
# Understanding path dependence:

## 3. ...and the risk of massive stranded assets

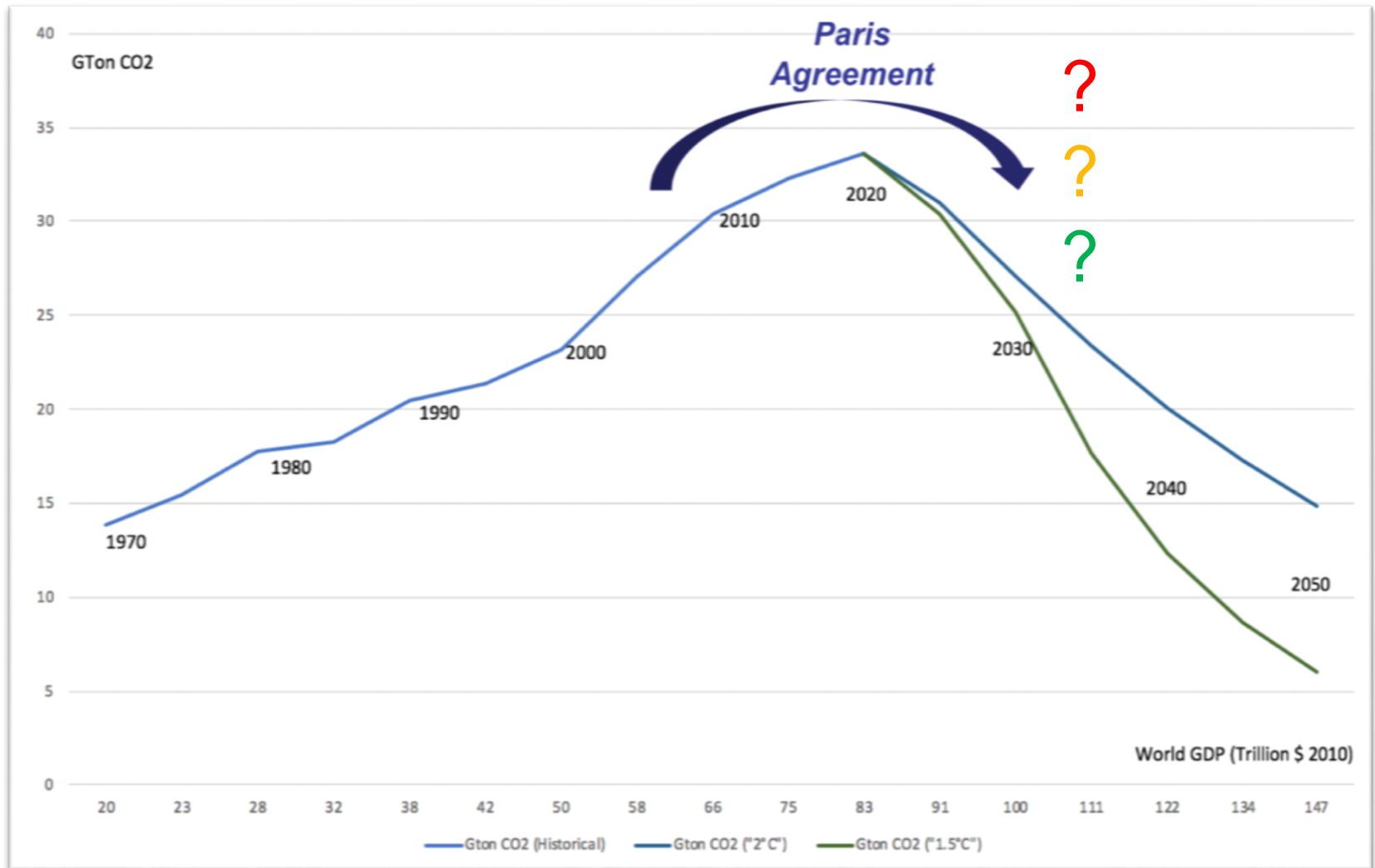


# Understanding path dependence:

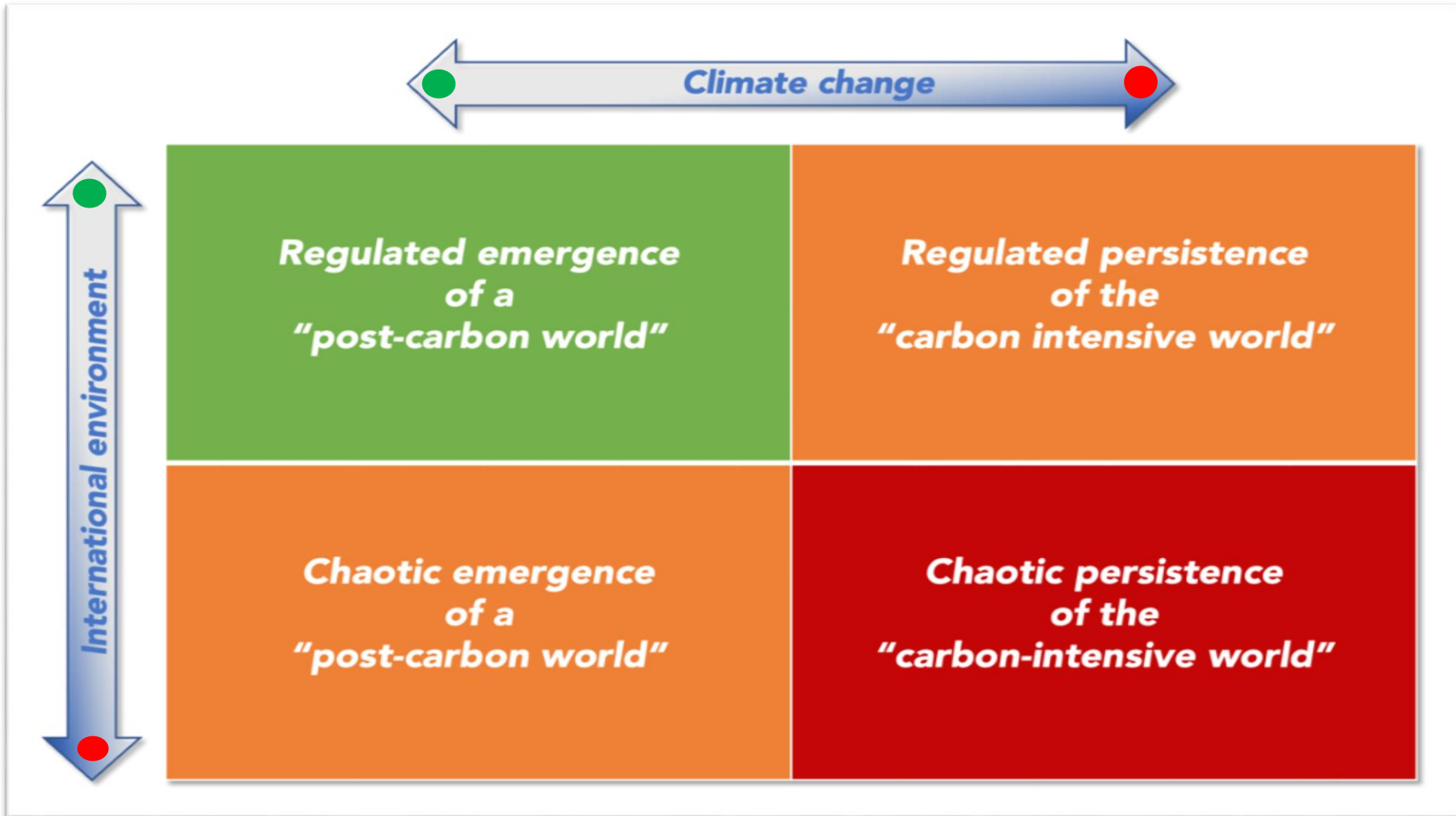
## 4. The geopolitical dimension



# Which "futures" for the Paris Agreement?



# Four potential “states of the world”



# Four potential “states of the world”

