



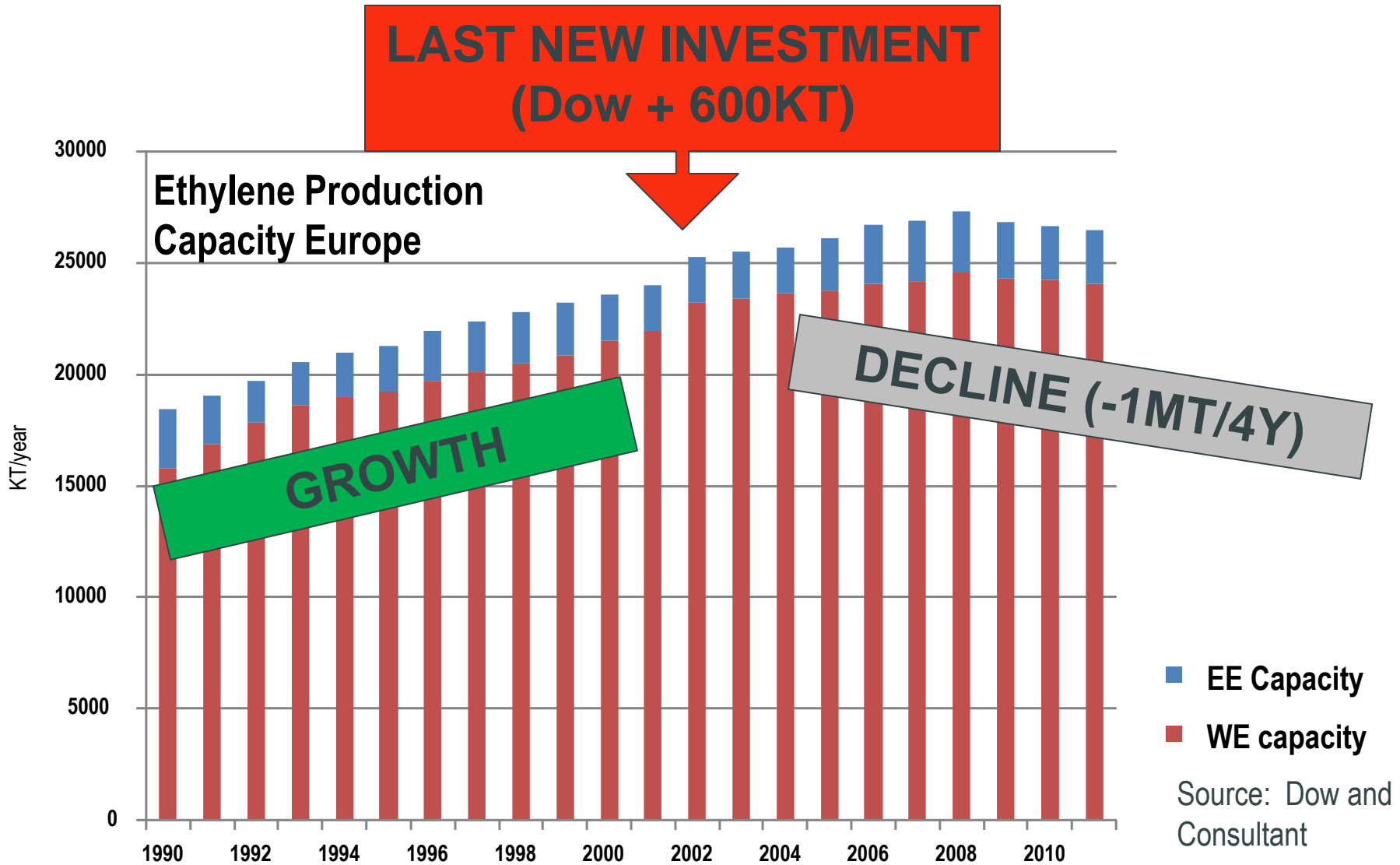
European Chemical Industry - post 2020 Energy Roadmap

***“when the facts change
do we need to change our policies?”***

Russel Mills – Global Director Energy & Climate Policy – Dow Chemical

European Energy Forum - 21st May - European Parliament Strasbourg

Our Manufacturing Building Blocks are Leaking Investments

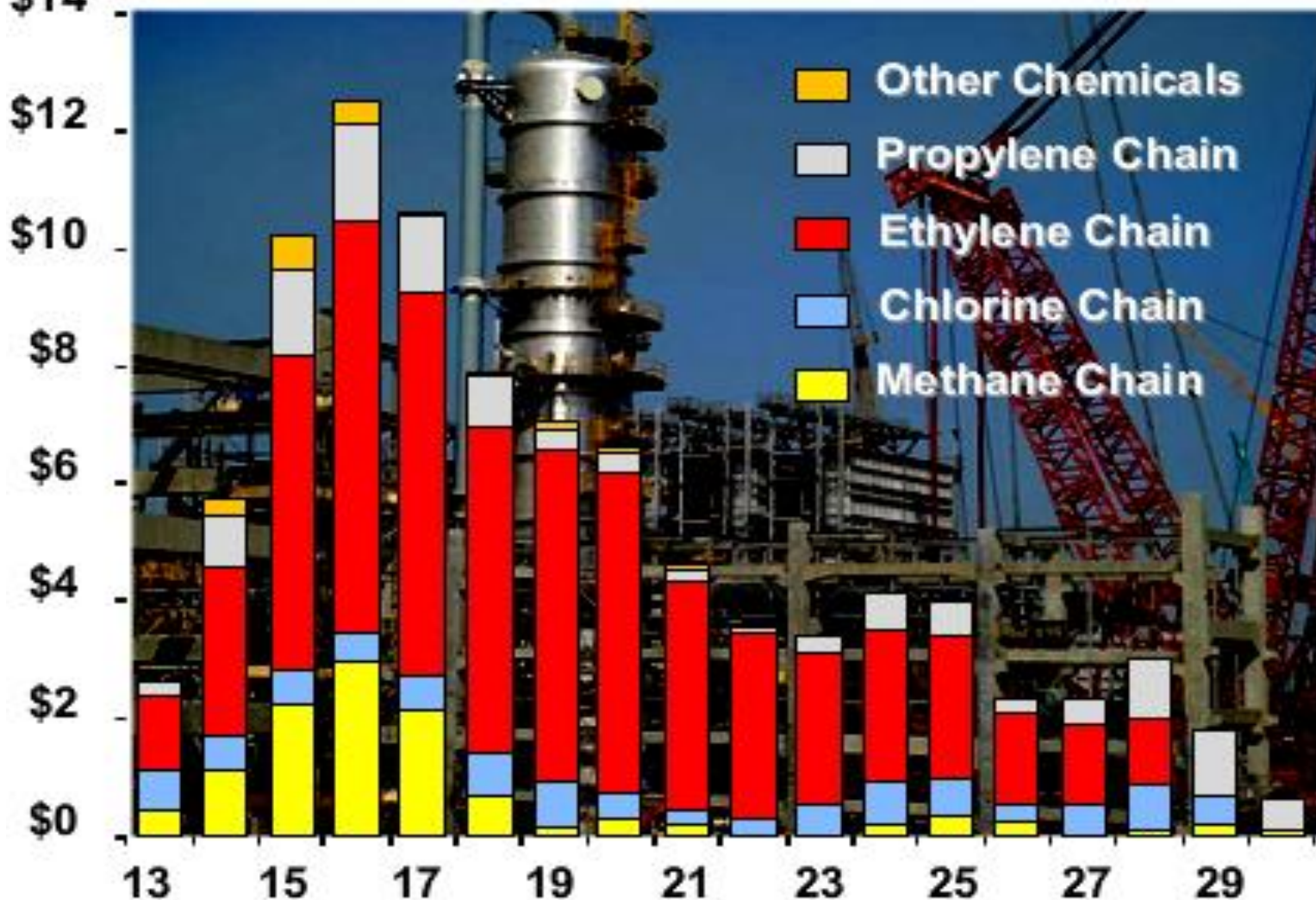


“Affordable Energy” drives Different Investment Outlook

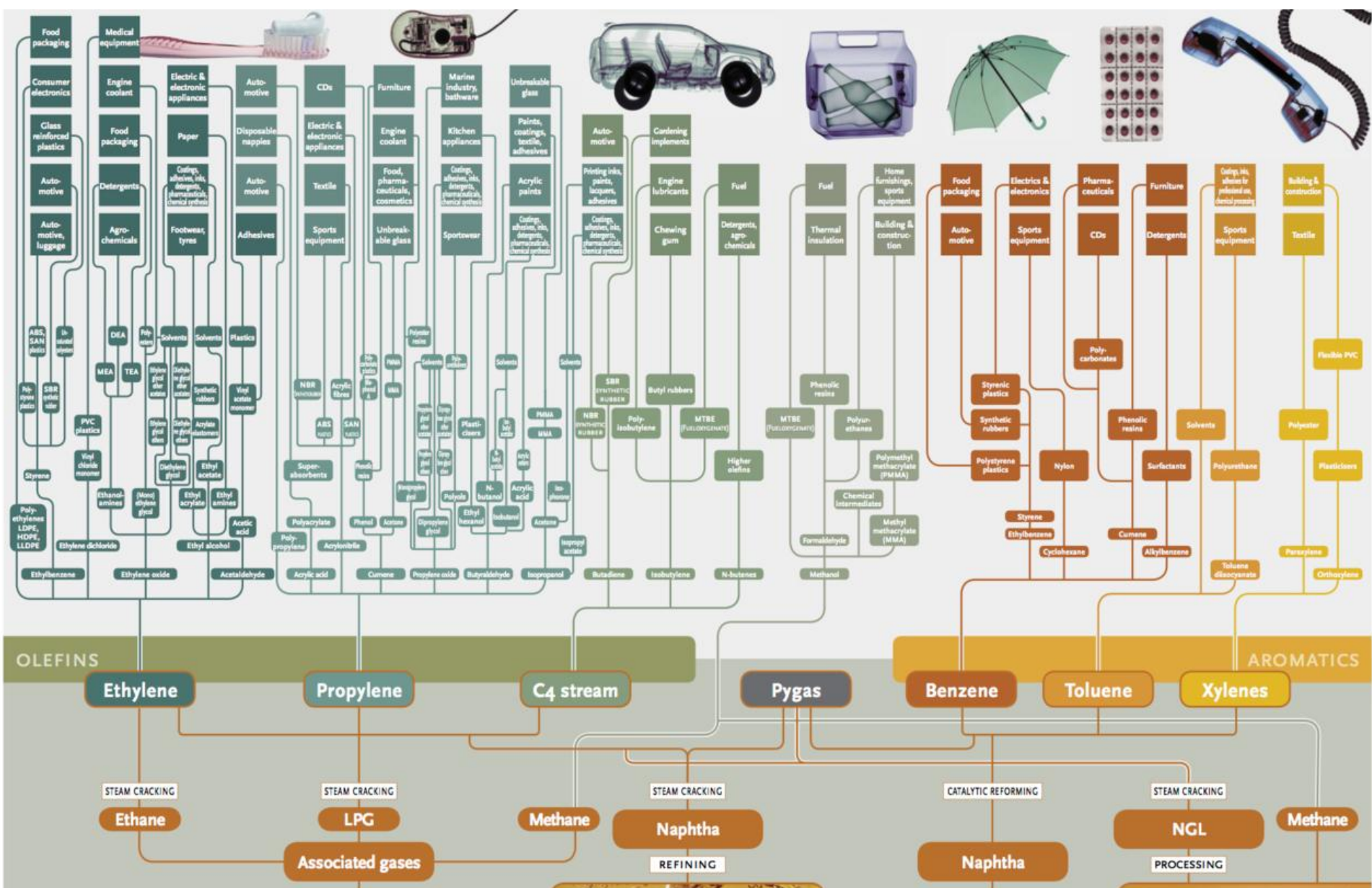
North American Capital Spend

Source: IHS - 2013

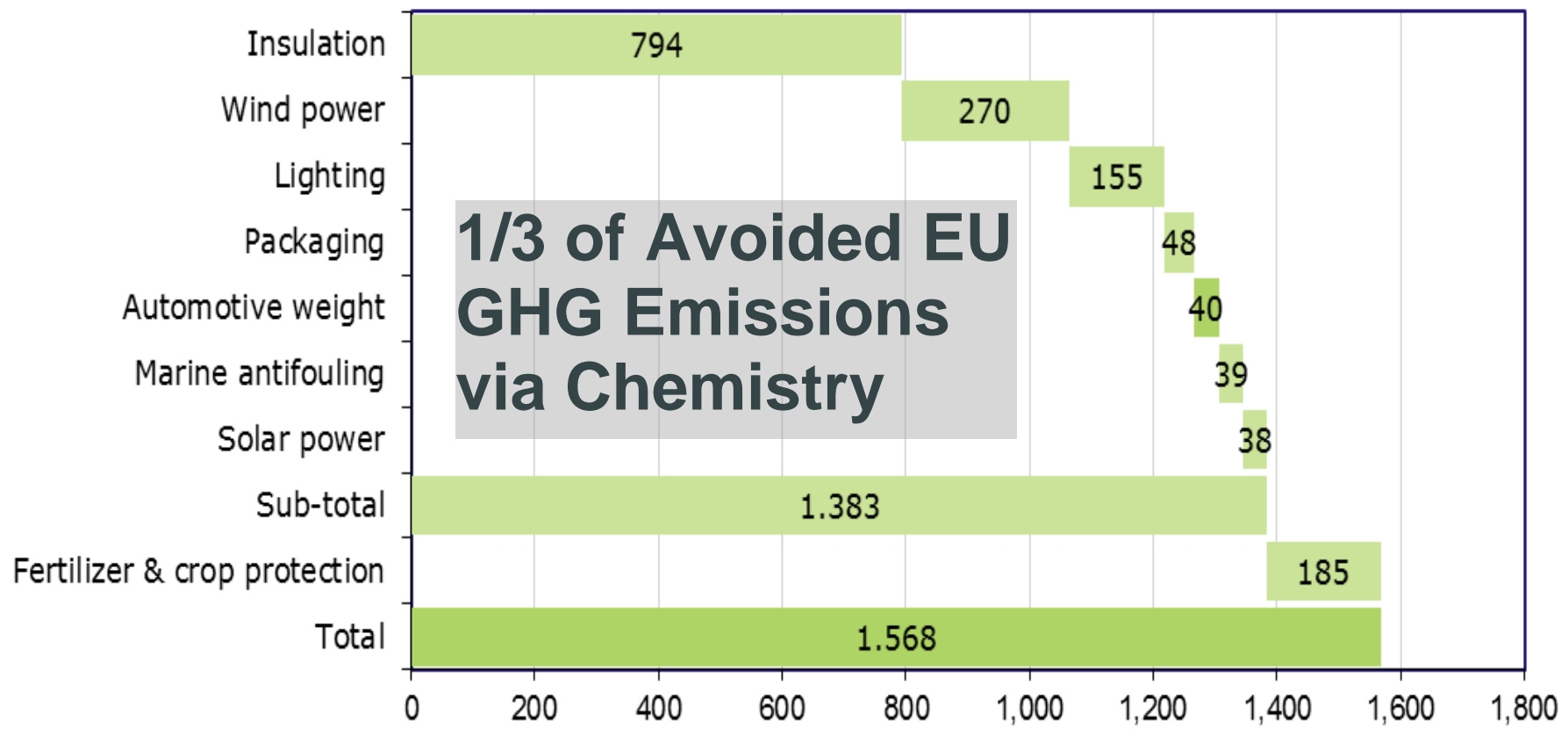
Billions
\$14



95% of Manufacturing Rely on Chemical Building Blocks



Sustainable Future = MORE High Performance Materials

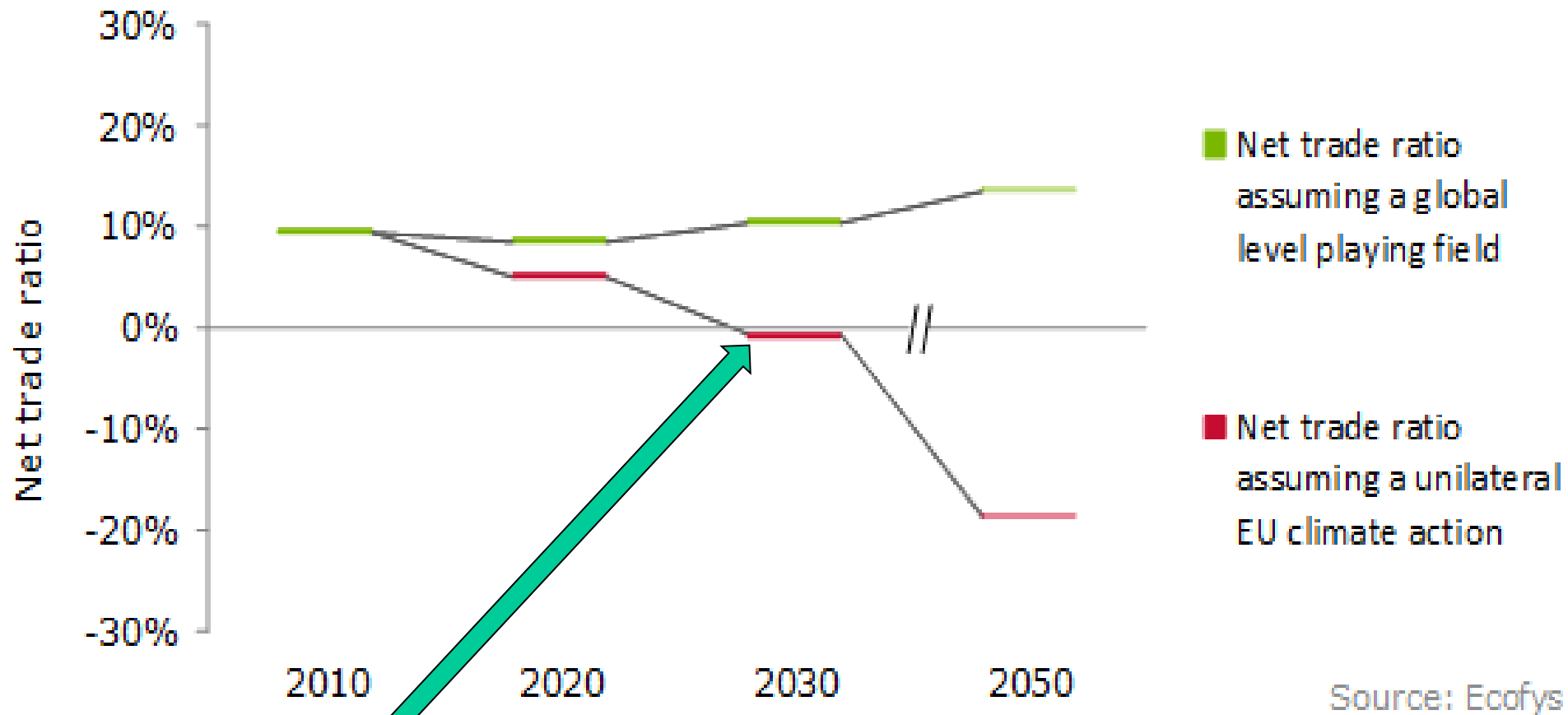


Source: Ecofys

Avoided emissions (Mtonne)



Policy Choice: Where to Manufacture for this Demand



**Consequences of Unilateral Action:
Exporting Production & Increasing Global GHGs**

Summary – Policy Choices – Dialogue Items

Higher Energy Costs = Lower GDP Growth

- Adding **Costs & Policy Burdens** relative to other Major Regions proven **Counterproductive**
 - Chemistry building block investments **early indicator** of manufacturing **decline or revival**

Chemistry impacts 95% Value Chain

- Manufacturing creates
 - Jobs (25%)
 - R&D (80%)
 - Exports (75%)
- **Uncompetitive building blocks undermine full manufacturing chain**

Summary – Policy Choices – Dialogue Items

Sustainable Future (Efficiency & Energy Alternatives) needs more Higher Performance Materials

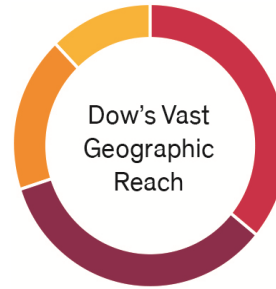
- 1/3 of Growing EU Consumption **Emissions avoided via Chemistry**
- **Policies influence** what will be future **EU Production** share

Multiple Workable Alternatives

- **Global Actions** precondition for further **Climate Commitments**
- Transition to predictable **opportunity driven policy**, maintain exemptions while burdens reduced & investments return
- **Allow all energy technologies** for effective energy solutions & focus innovations on tackling **cost effectiveness for global leadership**

Back up slides

Dow Locations



Percent of 2012 Global Sales

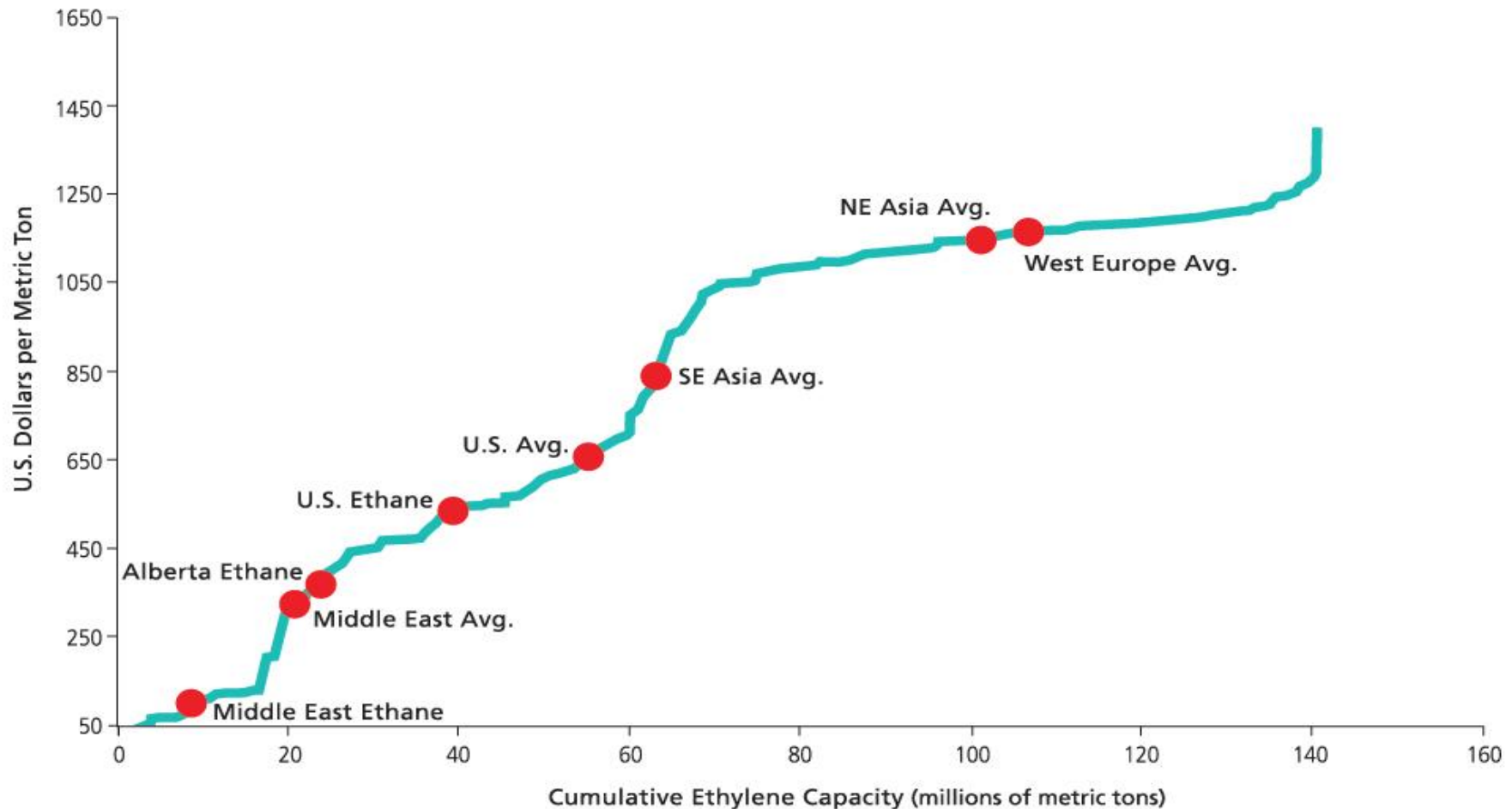
North America	36%
Europe, Middle East and Africa	34%
Asia Pacific	18%
Latin America	12%

- R&D Centers
- Service Centers
- PU Systems
- Hub Centers
- Headquarters
- Manufacturing
- Dow Facilities
- Sales Office



Attractive Margins/Regions driving Investments

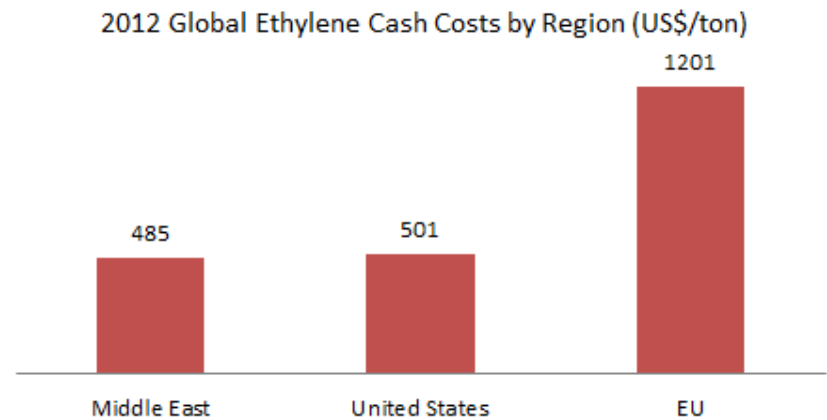
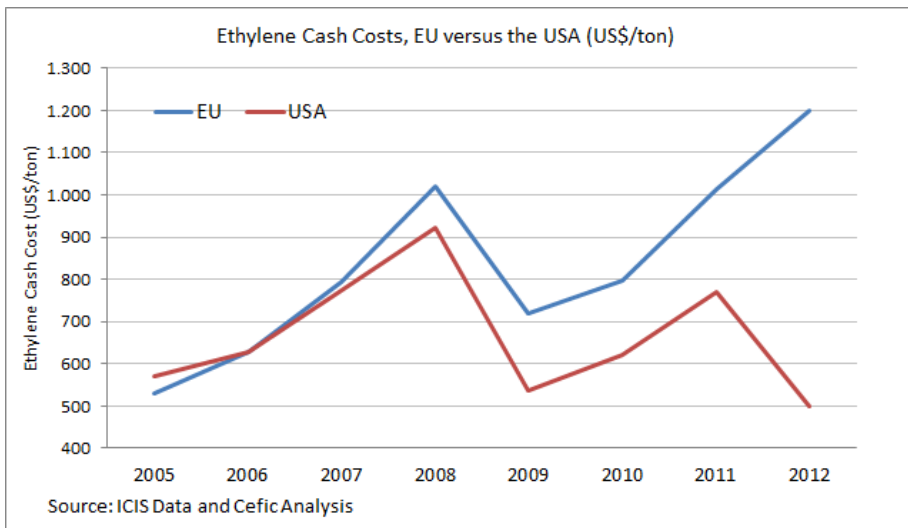
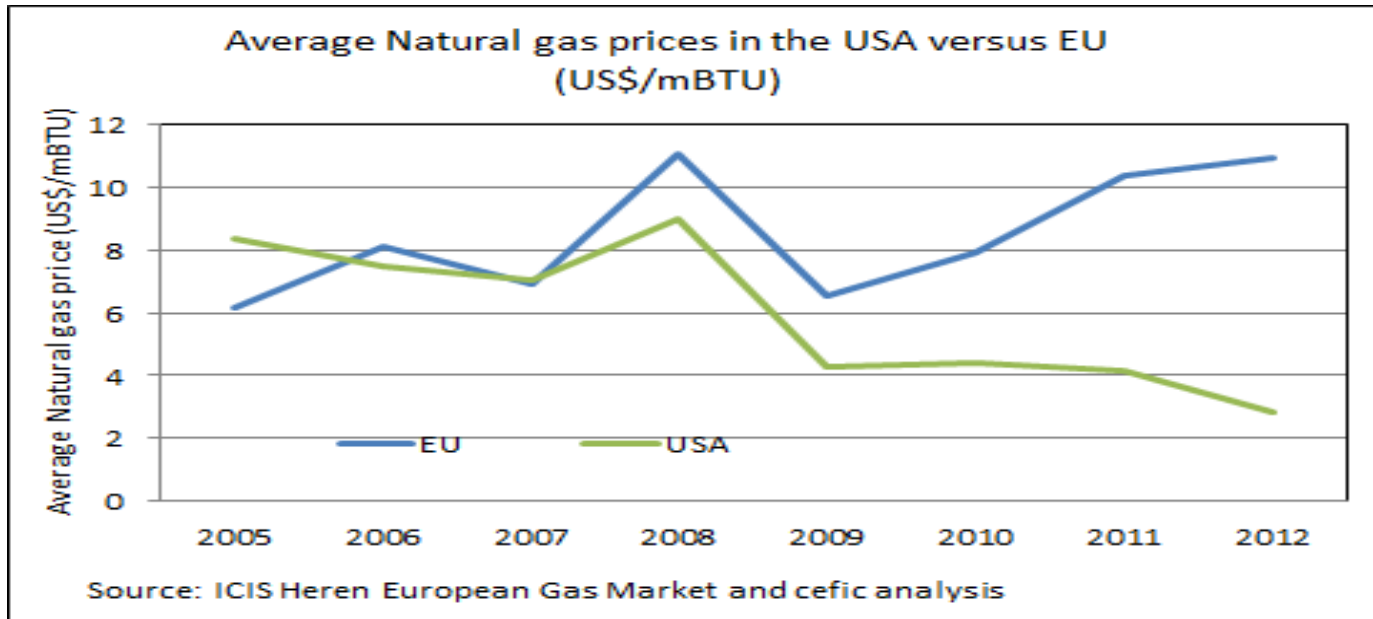
Global Ethylene Cost Curve



Source: IHS, Dow



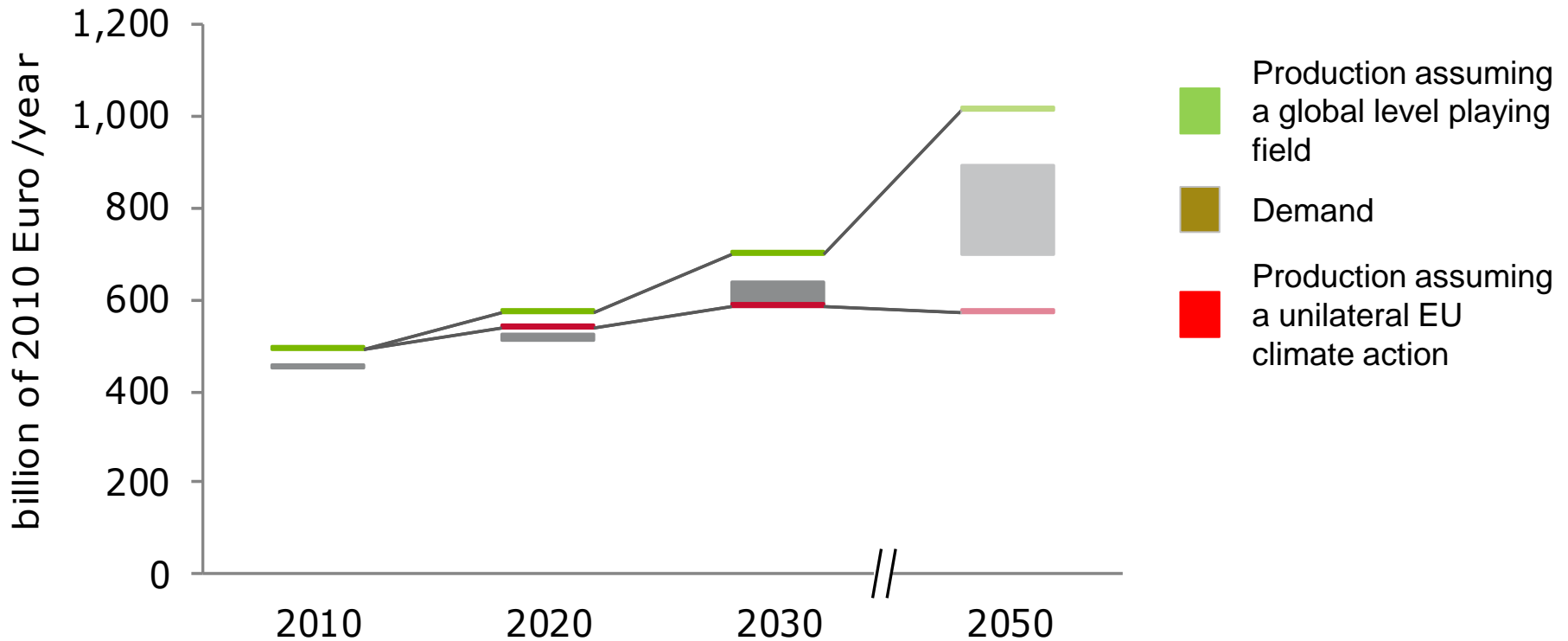
Energy Input Costs and Margin Impacts



Source: ICIS Consulting and Cefic Analysis



EU Chemicals Production under 2 Scenarios



Source: Ecofys

Growth and GHG Emission Reductions

