

Everything you always  
wanted to know about  
**Corporate Sustainability,**  
but were afraid to ask

If you want to know  
how this man  
made a movie  
out of this book...

International Forum on  
Sustainability

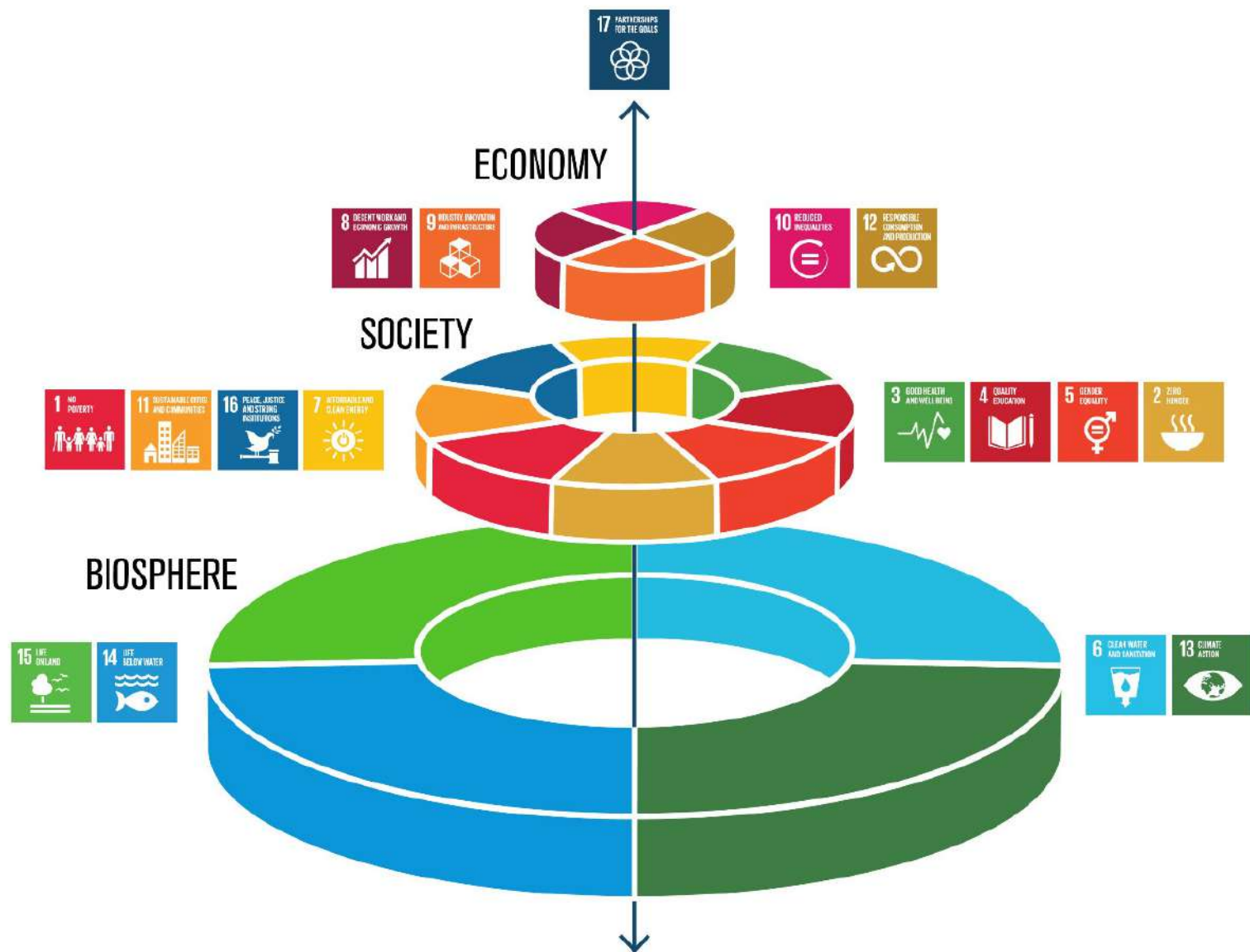
UFV

Pozuelo de Alarcón, Junio 2019

“Everything  
you always  
wanted  
to know  
about  
**sex**”

\* BUT WERE AFRAID TO ASK \*







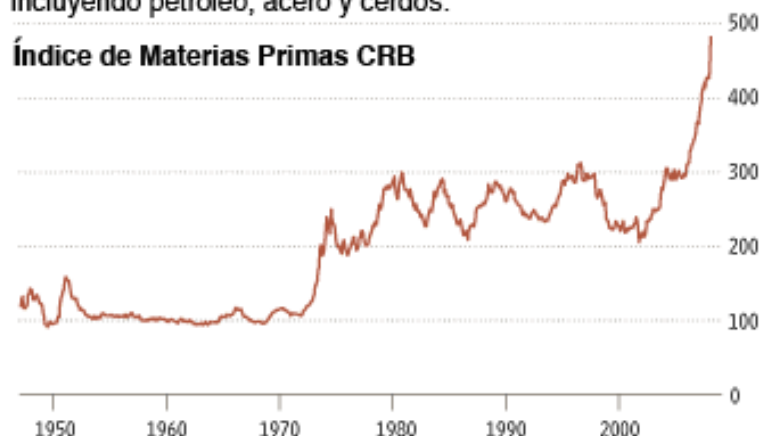
FOR THE  
TIMES THEY  
ARE A-  
CHANGIN'...



# Las Restricciones Globales de los Recursos

A medida que la población mundial aumenta, también aumenta su prosperidad. El aumento de los estándares de vida en el mundo en desarrollo han impulsado la demanda de recursos, elevando los precios. El Índice CRB Spot de precios para más de 22 materias primas, incluyendo petróleo, acero y cerdos:

## Índice de Materias Primas CRB



Fuente: Commodity Research Board

## Población Global



## Dietas más ricas

En muchos países en desarrollo, más gente está adoptando dietas ricas en proteínas más ricas en carne, agotando los suministros de agua y tierra de cultivo.

Fuente: Naciones Unidas

## Consumo de calorías diarias por persona

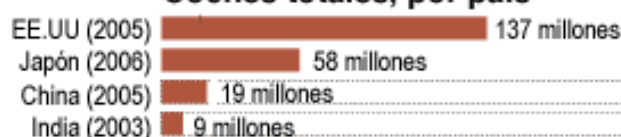


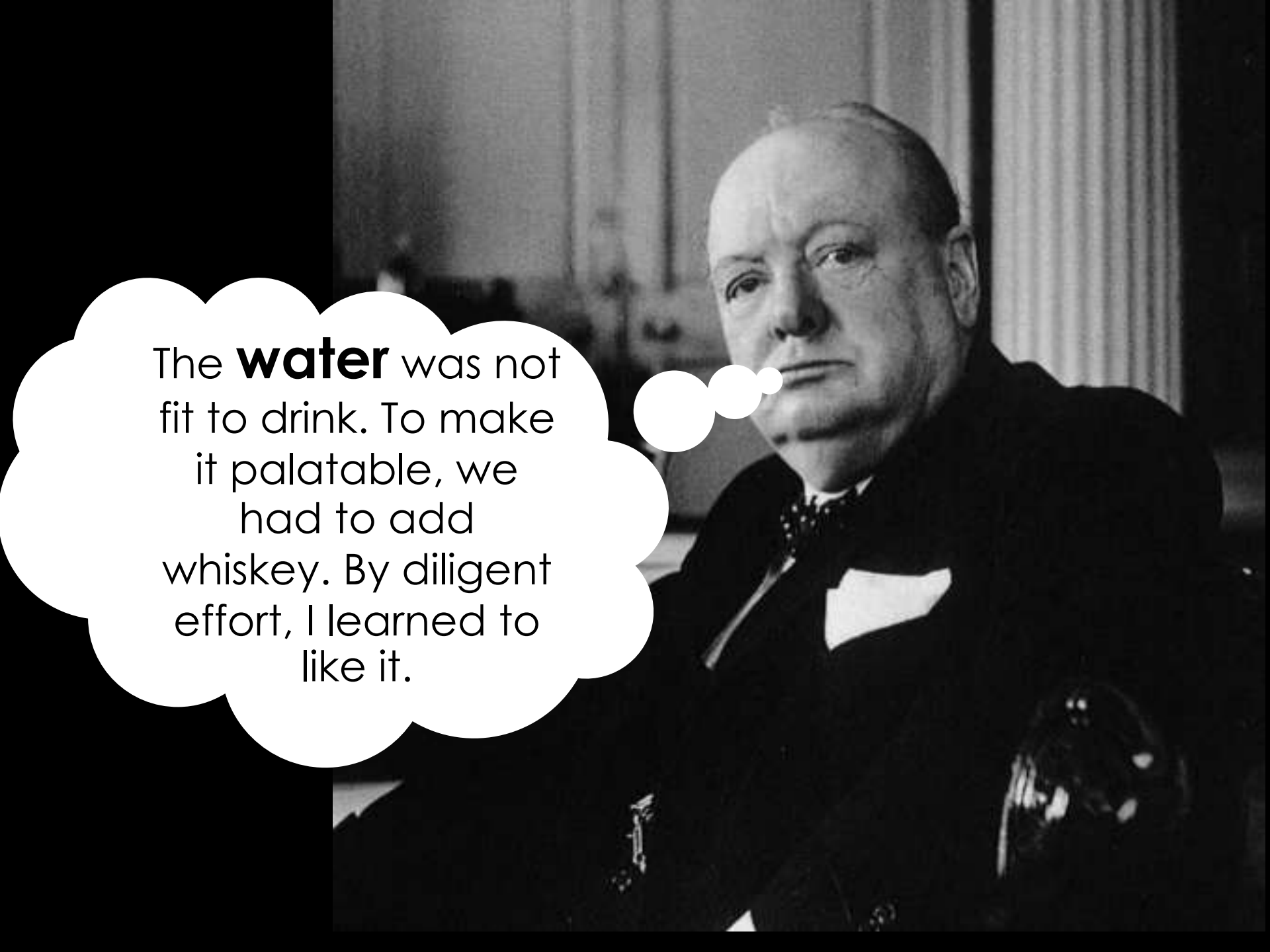
Nº de coches si la tasa de propietarios per cápita llegase a niveles de los EE.UU.

## Planeta automovil

Los coches en propiedad en China e India están aumentando, lo que podría añadir una significativa presión en los suministros.

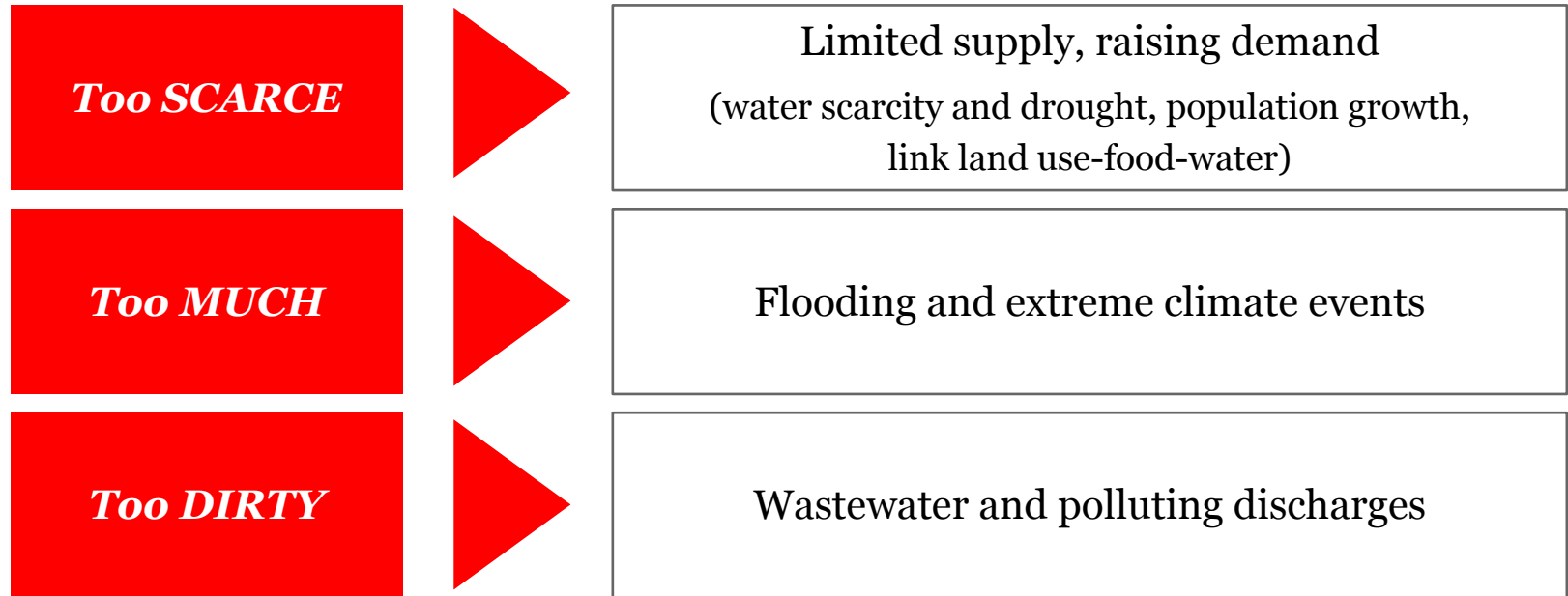
## Coches totales, por país





The **water** was not  
fit to drink. To make  
it palatable, we  
had to add  
whiskey. By diligent  
effort, I learned to  
like it.

# Water challenge



“In too many places water is  
a triple paradox:

**scarce, cheap, and wasted.”**



Source: “Water and sustainability development. A business perspective” (WBCSD, 2005)



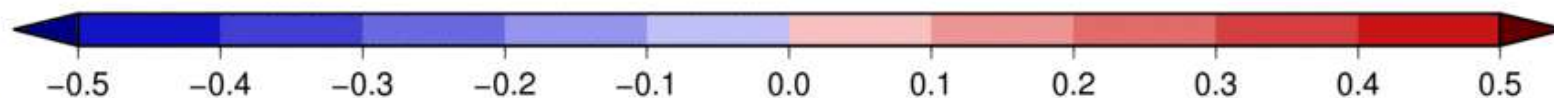
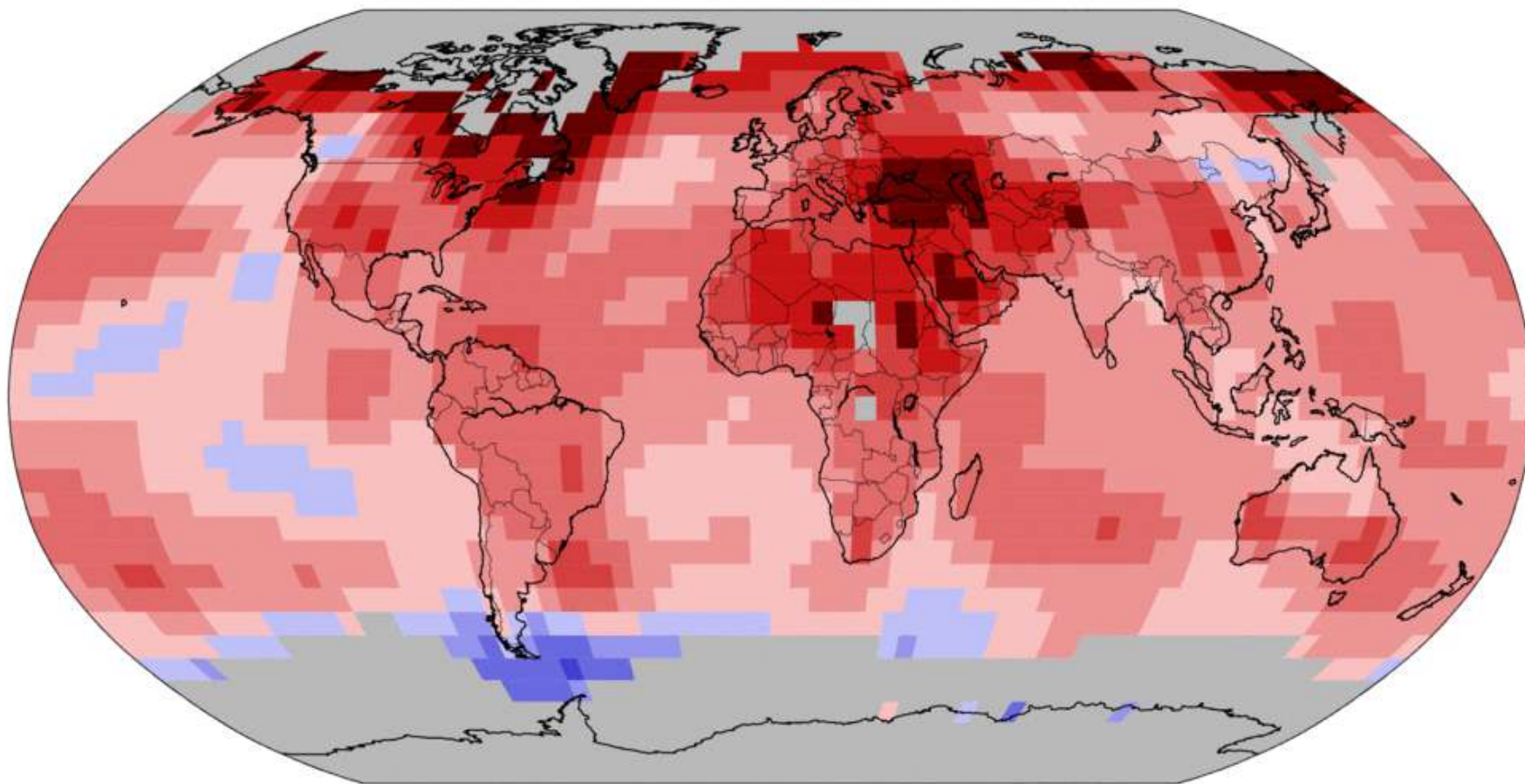
*"Global warming, in my opinion, is the last refuge of an environmentalist."*



# Jan–Dec Land & Ocean Temperature Trends

Period: 1988–2017

Data Source: GHCN–M version 3.3.0 & ERSST version 4.0.0



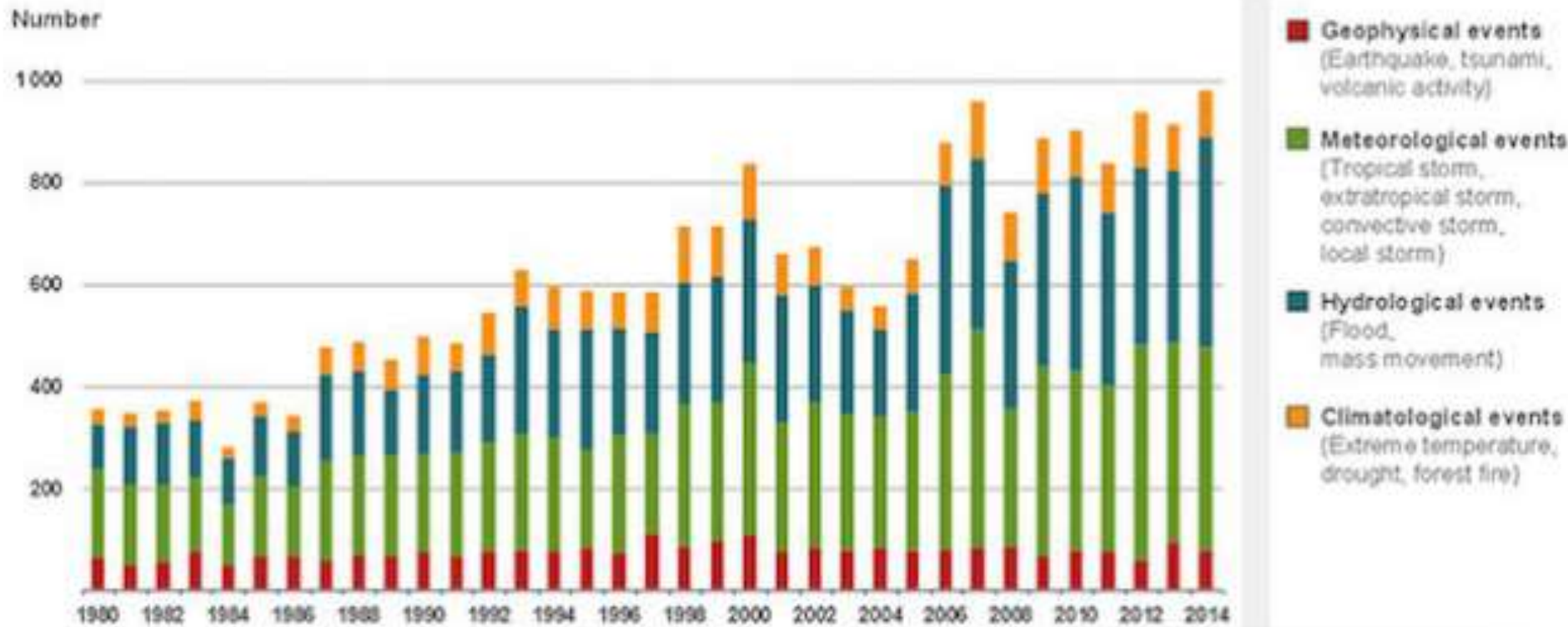
Degrees Celsius Per Decade

Please Note: Gray areas represent missing data  
Map Projection: Robinson



# WORLD NATURAL CATASTROPHES, 1980–2014

(Number of events)

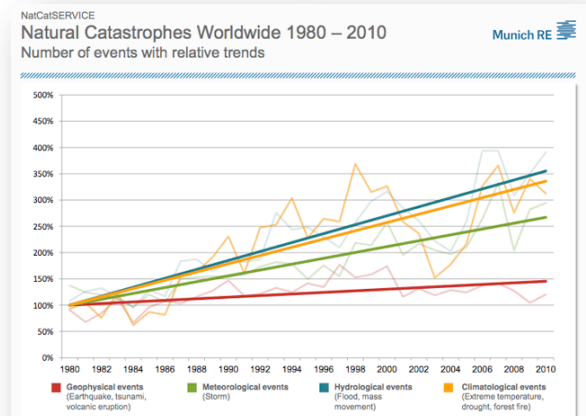


Source: © 2015 Munich Re, Geo Risks Research, NatCatSERVICE. As of January 2015.

Global losses due to Climate Change:

4 times as many issues as in 1980

8 times more economic losses



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## WEF Top Global Risks

### Categories

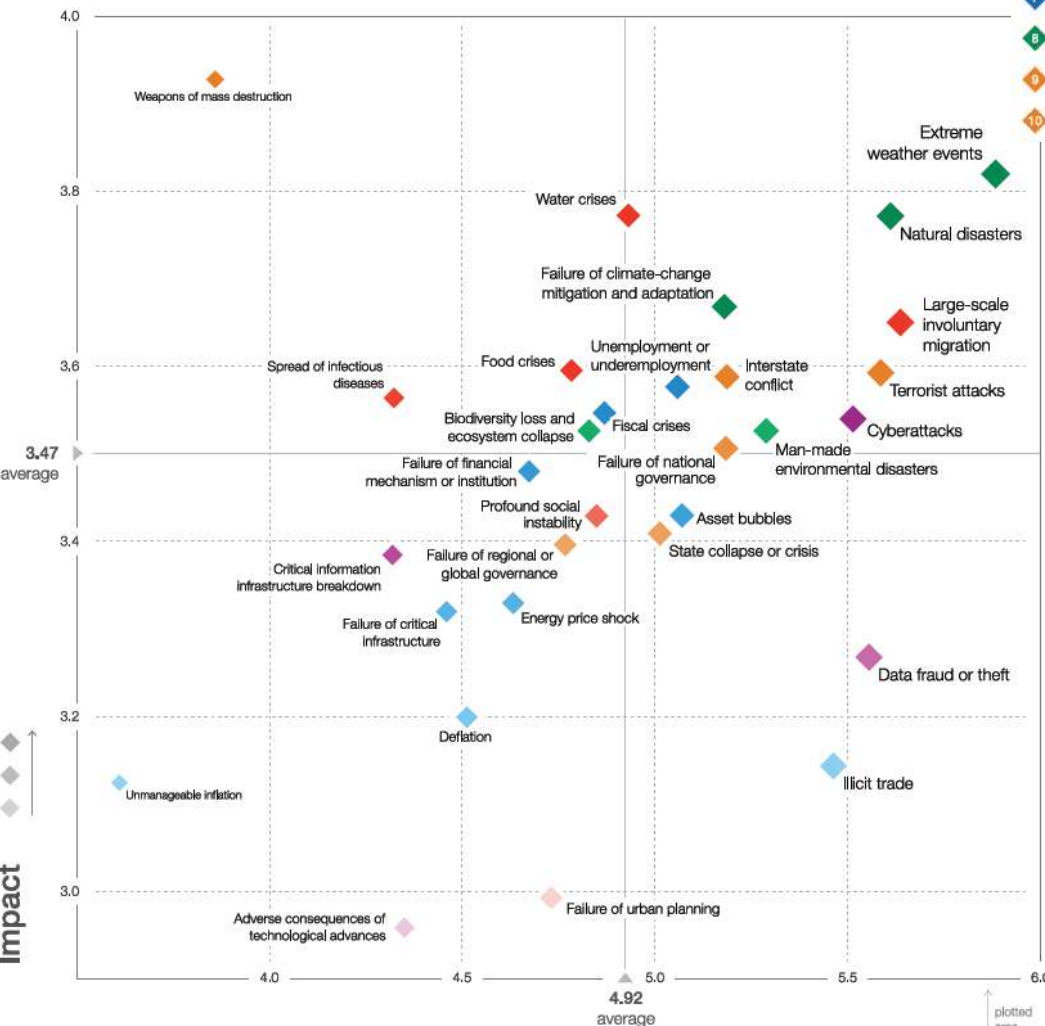
- ◆ Economic
- ◆ Environmental
- ◆ Geopolitical
- ◆ Societal
- ◆ Technological

### Top 10 risks in terms of Likelihood

- 1 Extreme weather events
- 2 Large-scale involuntary migration
- 3 Natural disasters
- 4 Terrorist attacks
- 5 Data fraud or theft
- 6 Cyberattacks
- 7 Illicit trade
- 8 Man-made environmental disasters
- 9 Interstate conflict
- 10 Failure of national governance

### Top 10 risks in terms of Impact

- 1 Weapons of mass destruction
- 2 Extreme weather events
- 3 Water crises
- 4 Natural disasters
- 5 Failure of climate-change mitigation and adaptation
- 6 Large-scale involuntary migration
- 7 Food crises
- 8 Terrorist attacks
- 9 Interstate conflict
- 10 Unemployment or underemployment



### Top 5 Global Risks in Terms of Impact

2015	2016	2017
Water crises	Failure of climate-change mitigation and adaptation	Weapons of mass destruction
Rapid and massive spread of infectious diseases	Weapons of mass destruction	Extreme weather events
Weapons of mass destruction	Water crises	Water crises
Interstate conflict with regional consequences	Large-scale involuntary migration	Major natural disasters
Failure of climate-change mitigation and adaptation	Severe energy price shock	Failure of climate-change mitigation and adaptation

Source: World Economic Forum (2017). Global risks report 2017





# RISKY BUSINESS

The Economic Risks of Climate Change in the United States

*June 2014*

A CLIMATE RISK ASSESSMENT  
FOR THE UNITED STATES



2019 Status Report

# Task Force on Climate-related Financial Disclosures: Status Report

**TCFD** | TASK FORCE ON CLIMATE-RELATED  
FINANCIAL DISCLOSURES

## Acknowledgement of financial implications of Climate Change

Risks/opportunities behind the  
low carbon transition agenda

## Disclosure in mainstream financial filings

Carbon intensity across the  
portfolio of AUM

### Core Elements of Recommended Climate-Related Financial Disclosures



#### **Governance**

The organization's governance around  
climate-related risks and opportunities

#### **Strategy**

The actual and potential impacts of  
climate-related risks and opportunities on  
the organization's businesses, strategy, and  
financial planning

#### **Risk Management**

The processes used by the organization to  
identify, assess, and manage climate-related  
risks

#### **Metrics and Targets**

The metrics and targets used to assess and  
manage relevant climate-related risks and  
opportunities



**CANADA** →

**UNITED STATES** →

**EUROPE** →

**JAPAN** →

# GET STARTED

Pick your location and learn how to divest in your part of the world:

**SOUTH AFRICA** →

**AUSTRALIA** →

**NEW ZEALAND** →

DIVESTMENT UPDATES ↓

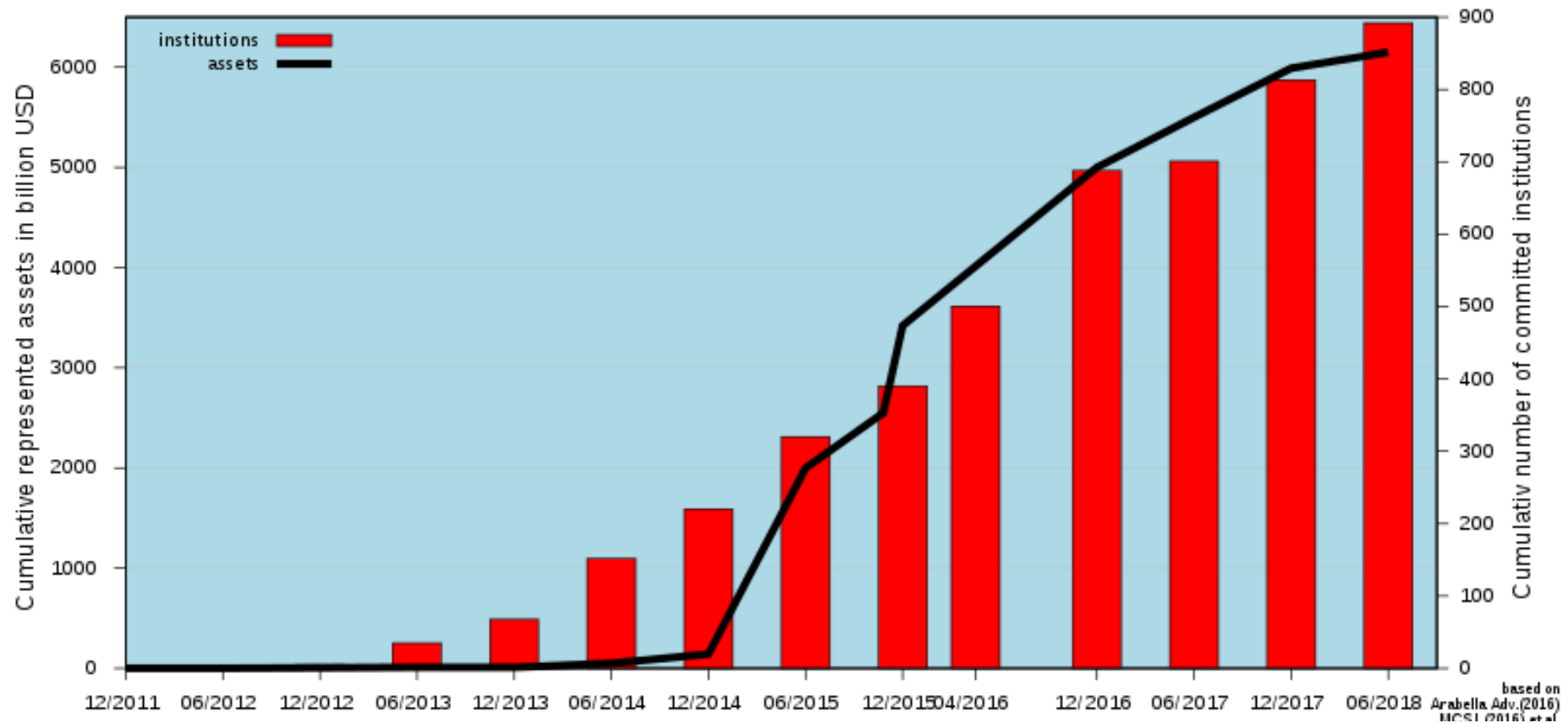
**The California state**



## Sign up!

Stay up to date with latest from the fossil fuel divestment movement!

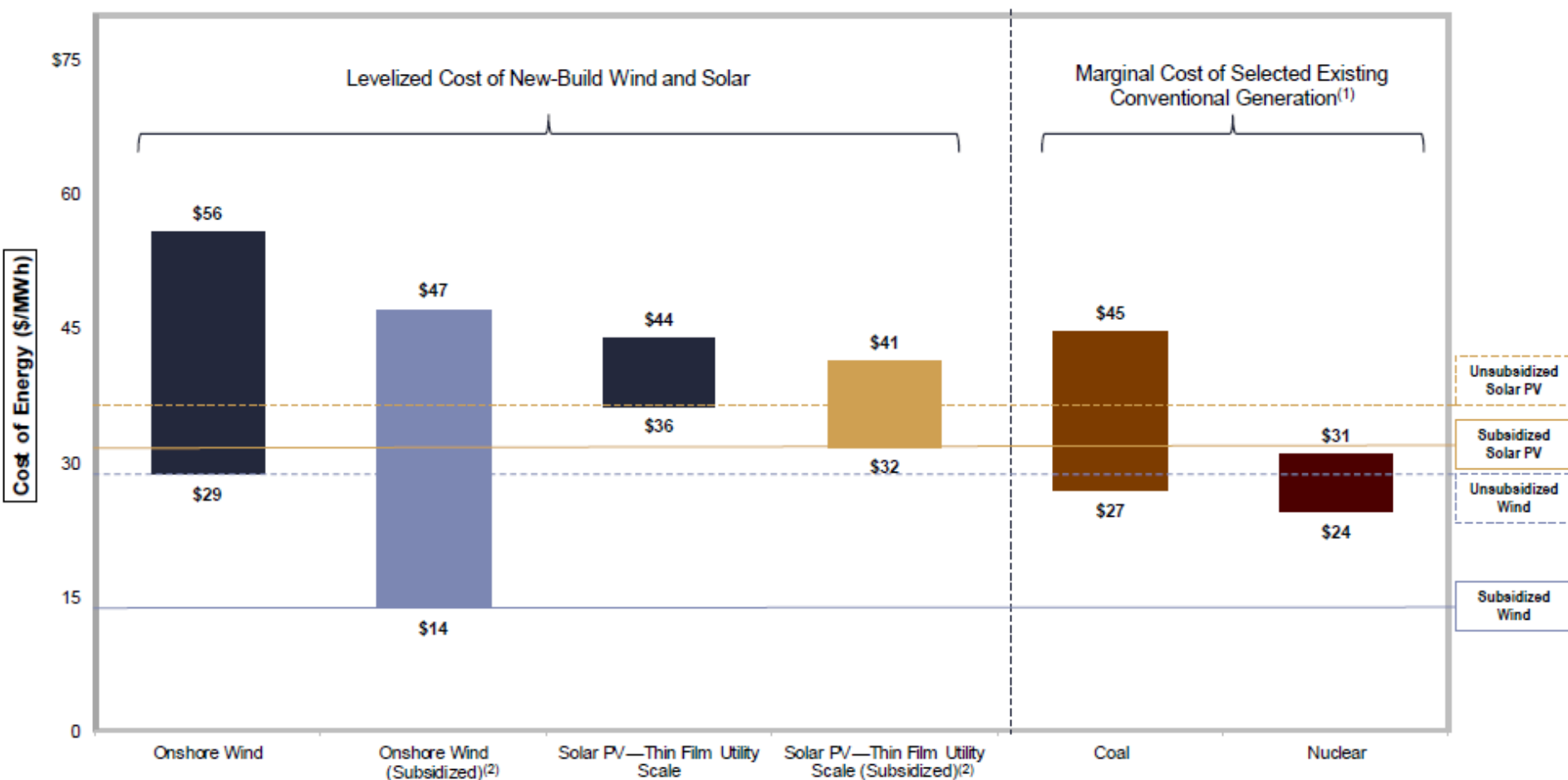
# Nearly 900 Investors representing over \$6 Trillion of AUM are divesting from Fossil Fuels



Source: Meggin Thwing Eastman: *Fossil Fuel Divestment: A Practical Introduction*. MSCI (Ed.). September 2016 ([gofossilfree.org](http://gofossilfree.org)) and MCSI figures "The Global Fossil Fuel Divestment and Clean Energy Investment Movement." by Arabella Advisors ([https://commons.wikimedia.org/wiki/File:Divestment\\_growth\\_en.svg](https://commons.wikimedia.org/wiki/File:Divestment_growth_en.svg)).

## Levelized Cost of Energy Comparison—Alternative Energy versus Marginal Cost of Selected Existing Conventional Generation

Certain Alternative Energy generation technologies, which became cost-competitive with conventional generation technologies several years ago, are, in some scenarios, approaching an LCOE that is at or below the marginal cost of existing conventional generation technologies

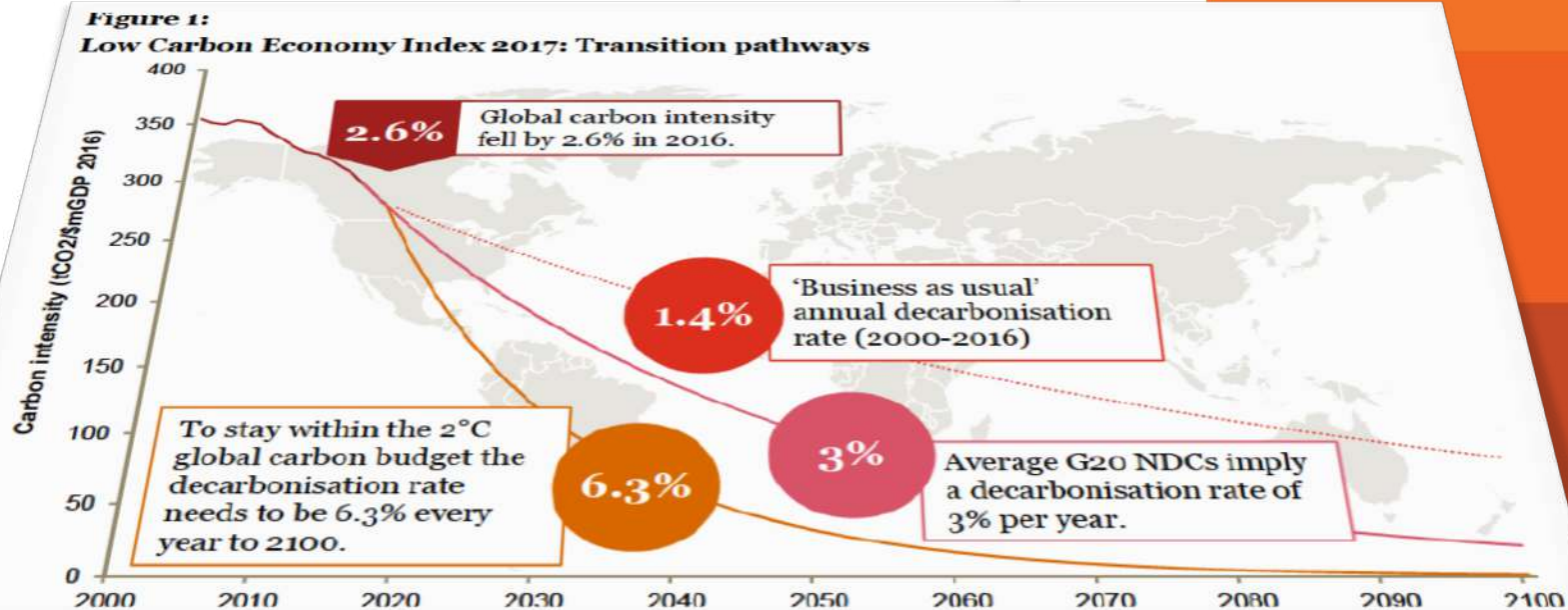




**Decarbonization rate is nearly doubling the average since 2000, but it falls just short of the 6,3% annual decarbonization required to achieve Paris targets (2°C)**

[www.pwc.co.uk/lowcarboneyconomy](http://www.pwc.co.uk/lowcarboneyconomy)

*Is Paris possible?*  
The Low Carbon Economy Index 2017



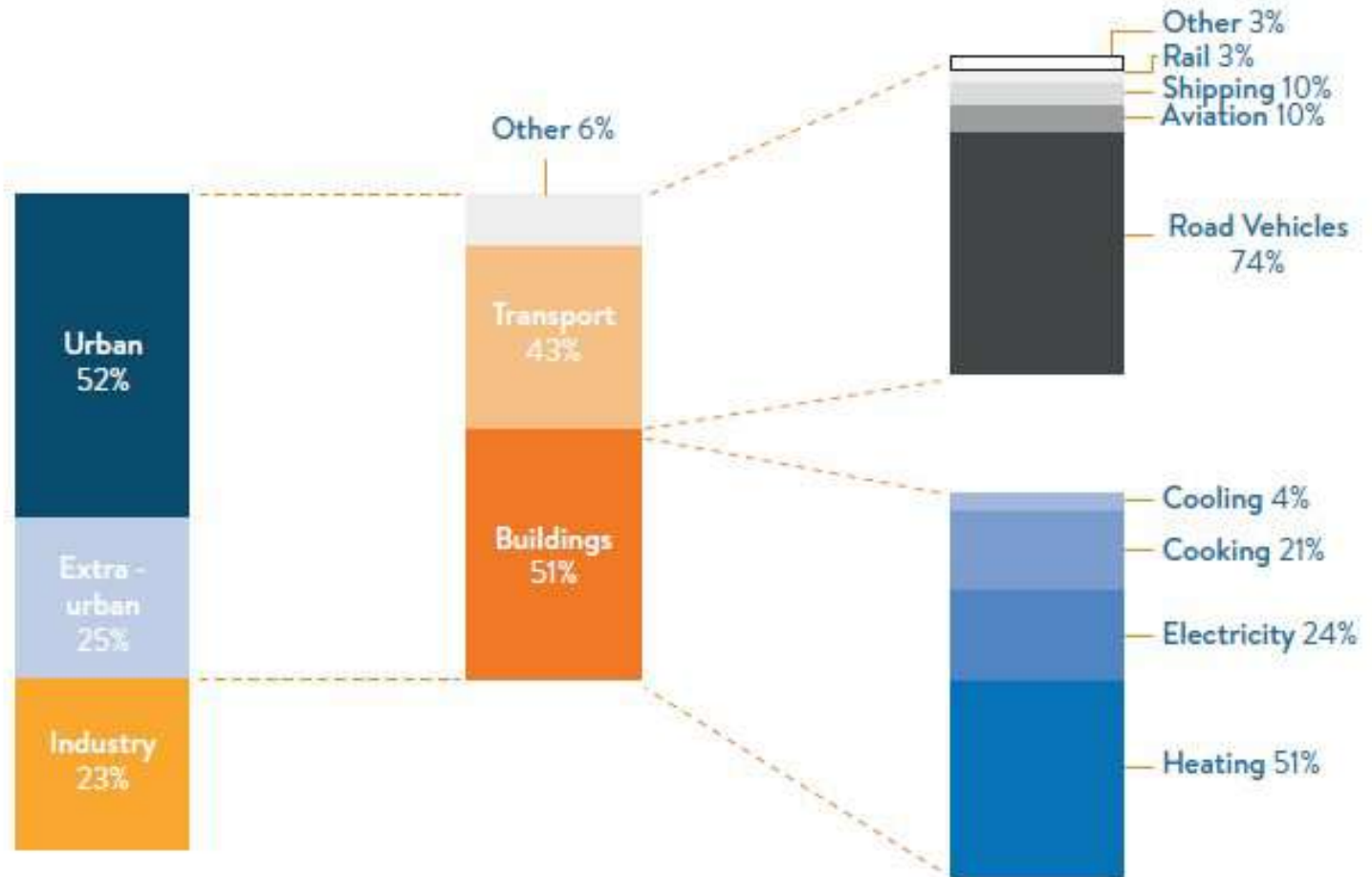




1,7

Ton/per cápita

Figure 1 Global energy consumption from urban and other uses<sup>7</sup>



(source: Arup analysis based on IEA, UN Habitat, EIA, WEF sources)



# *Supertramp*

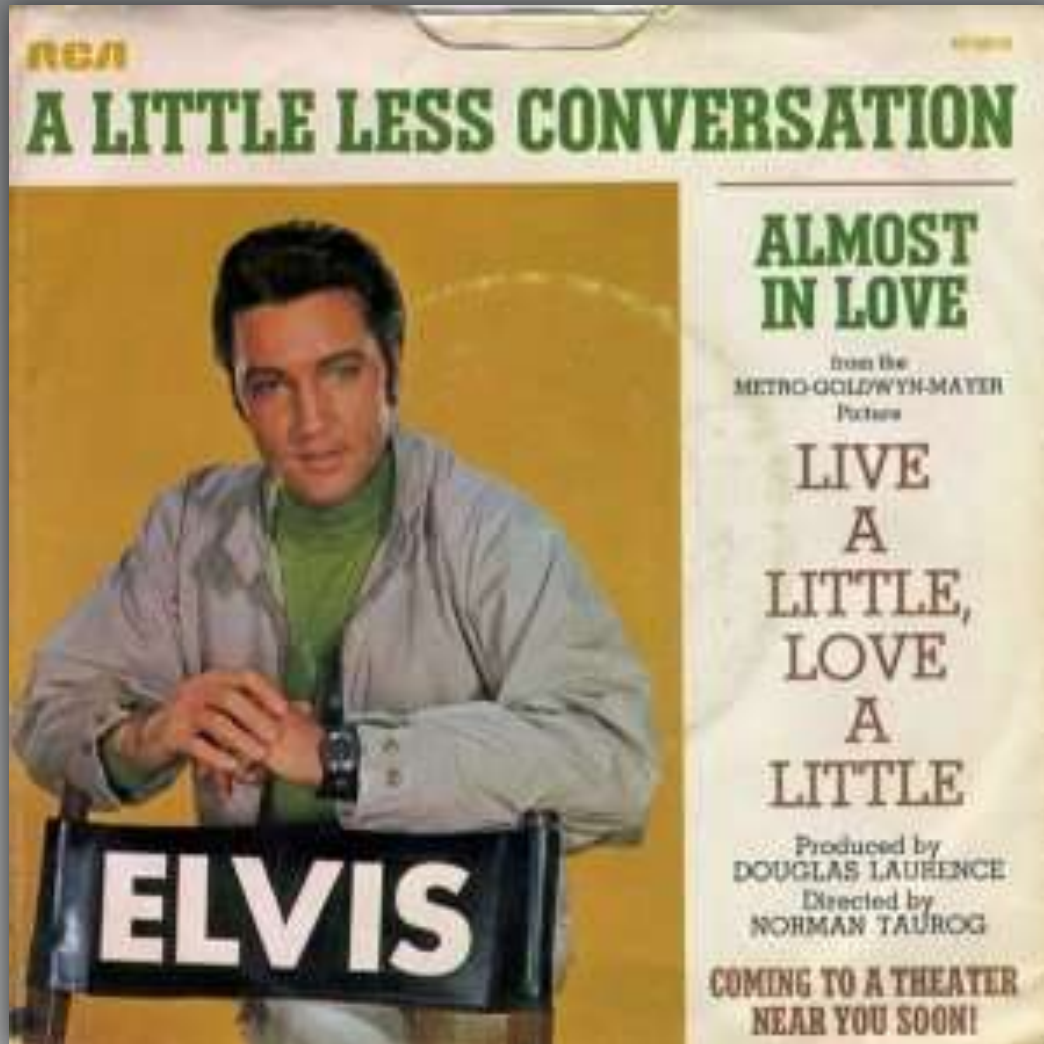
CRISIS? WHAT CRISIS?



394 560-2



# What are we doing???



# CSR is dead. What comes next?

Michael Townsend

Monday, January 12, 2015 - 2:30am

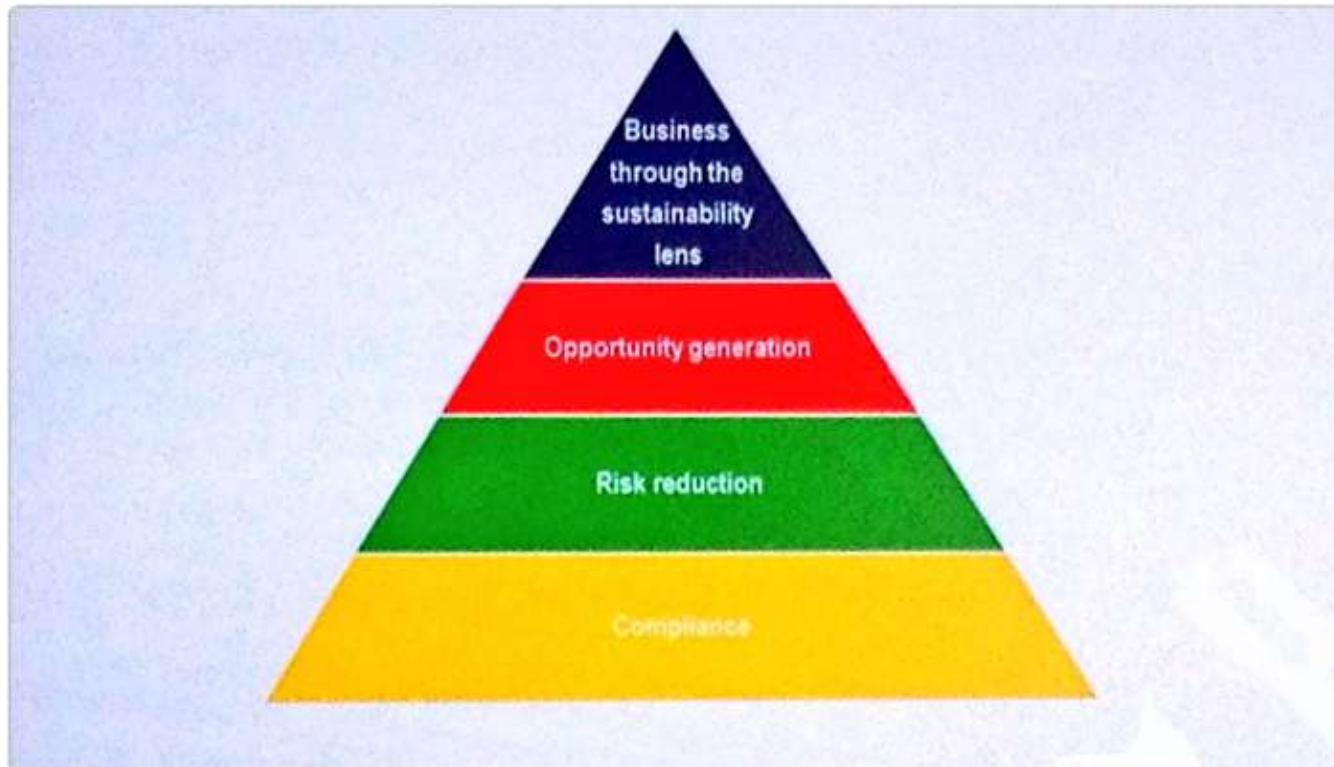


Shutterstock

*Corporate Social Responsibility has been businesses' entree to sustainability for decades — but it doesn't even come close to conveying the current state of play.*



Reunión @UNSDSN empresas+ODS: según @wbcsd la #RSC está muerta > rediseño radical > la #sostenibilidad debe permear toda la #empresa.



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# Ferrovial 2011-2020

*Delivering a reliable climate strategy*

## Carbon management

Ambitious reduction targets  
Action Plan (incl. adaptation)

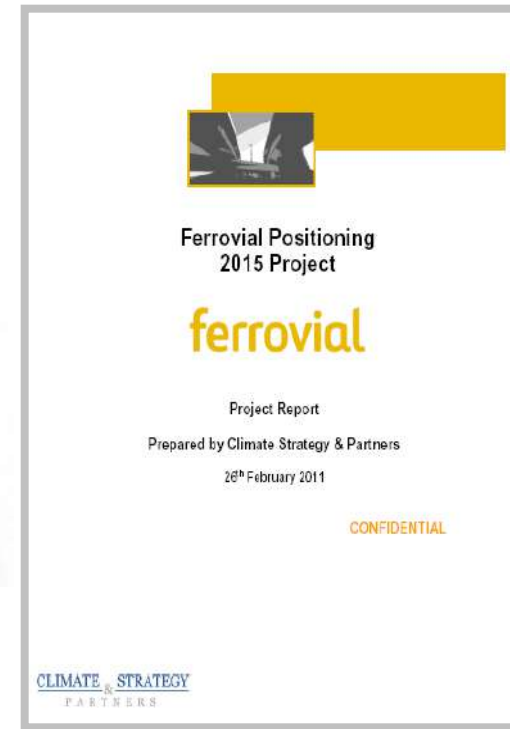


## Regulatory risk

Global / country level trends  
Building a specific framework in FRM

## Business opportunities

Smart/Green cities  
Sustainable mobility  
    Low carbon infrastructures  
Energy efficiency refitting (buildings)  
Energy from waste  
“SmartForest” investing in natural capital...





# ferrovial Ferrovial Carbon Footprint

Target 2020 (base year 2009):

**-35,4%** eTon/M€

2009 vs. 2018: **-54%** eTon/M€

In absolute terms: **-13,9%**

**44%** of total energy consumption from renewable sources



DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

**-32% (abs.)**  
**-42,9% (C.I.)**  
**-20% Scope 3**

SCOPE 1  
743,855 (tCO<sub>2</sub>eq)

Mobile  
333,149 (tCO<sub>2</sub>eq)

Machinery  
190,709 (tCO<sub>2</sub>eq)

Stationary  
195,011 (tCO<sub>2</sub>eq)

Heating  
4,302 (tCO<sub>2</sub>eq)

Diffuse  
215,695 (tCO<sub>2</sub>eq)

SCOPE 2  
109,727 (tCO<sub>2</sub>eq)

Electricity  
109,727 (tCO<sub>2</sub>eq)

Fuel and energy related activities  
219,335 (tCO<sub>2</sub>eq)

Waste generated in operations  
269,766 (tCO<sub>2</sub>eq)

Product use  
555,585 (tCO<sub>2</sub>eq)

Others  
1.848,434 (tCO<sub>2</sub>eq)

**TOTAL**  
Verified Emissions  
**3,834,364 (tCO<sub>2</sub>eq)**

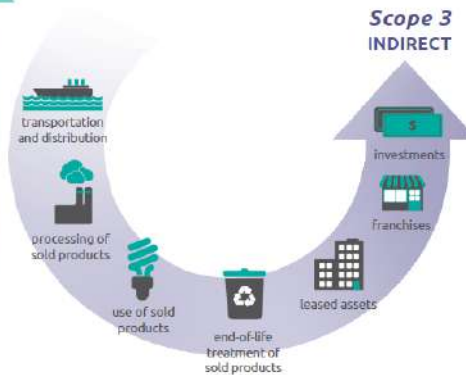
SCOPE 3  
2,893,120 (tCO<sub>2</sub>eq)

Scope 2  
INDIRECT

Scope 1  
DIRECT

Scope 3  
INDIRECT

Scope 3  
INDIRECT

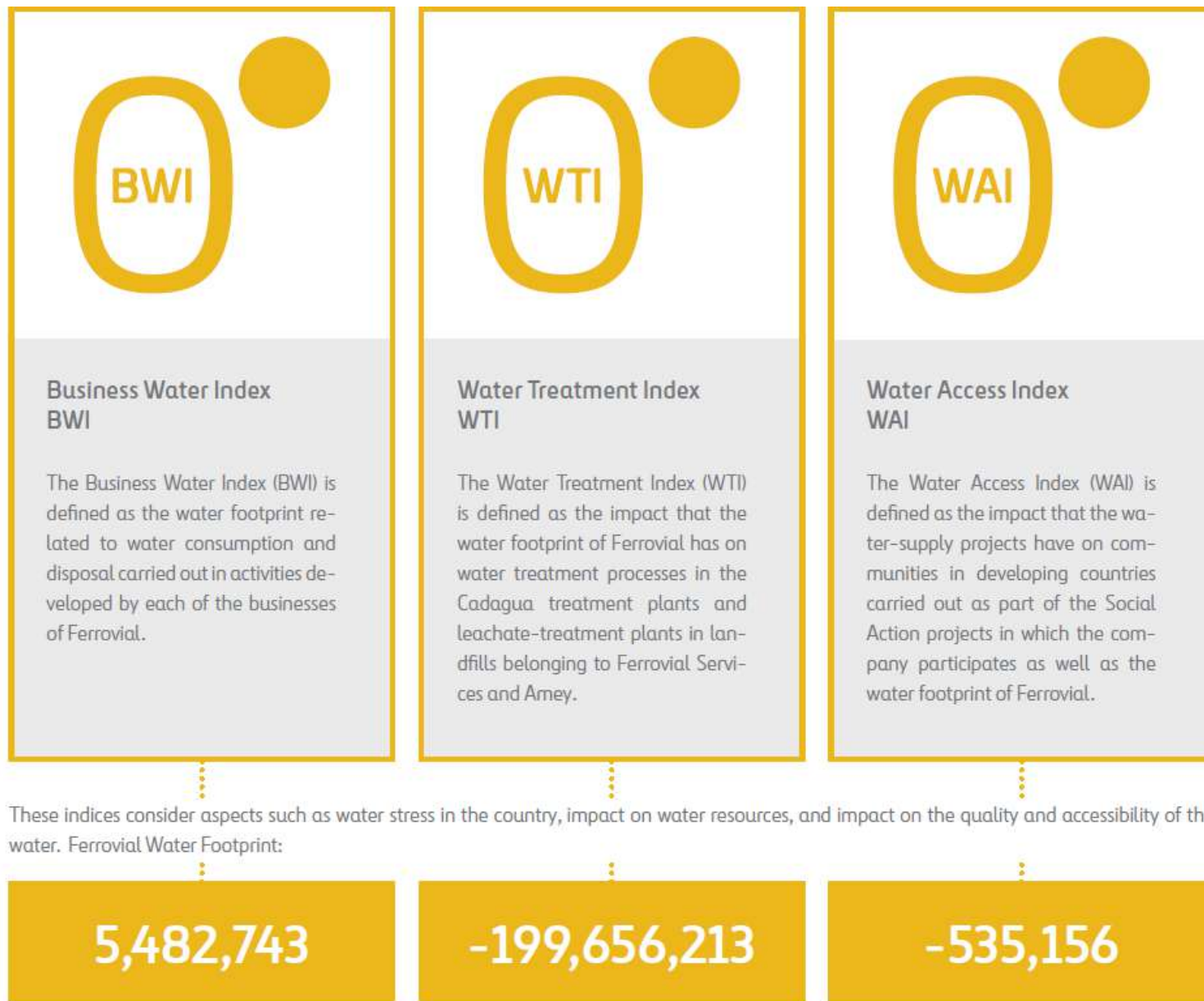


Upstream activities

Reporting company

Downstream activities

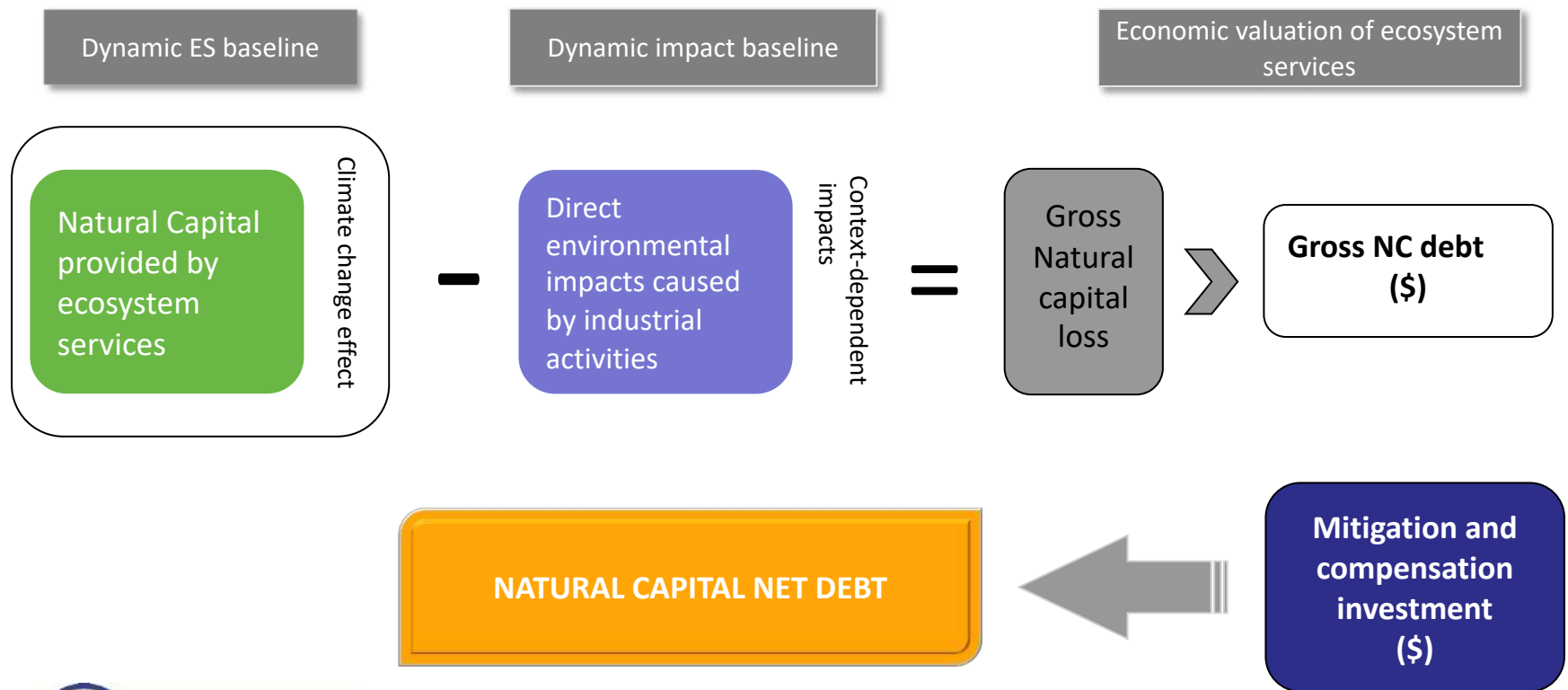
# ferrovial Ferrovial Water Footprint



**“We use Nature  
because is valuable,  
but we abuse Nature  
because is free”**

# Integrated Natural Capital Assessment

**INCA** is a methodology to evaluate the environmental risk of business activities in terms of Natural Capital Net Debt.





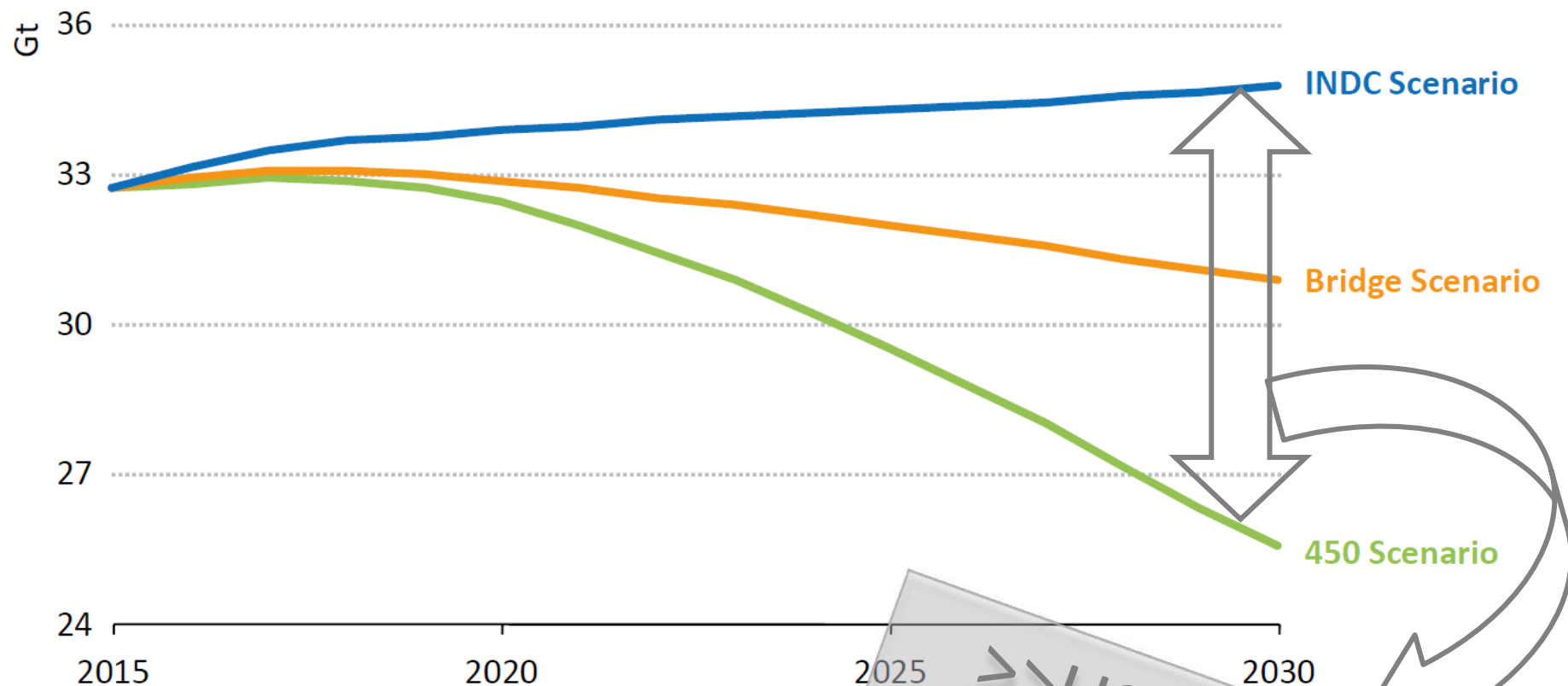
# MADNESS



ONE STEP BEYOND...

# A “Changing climate”, rather than Climate Change

*Business as usual is not an option*



**>>US\$ 1.000 bn**  
Additional investments needed to keep  
 $<2^{\circ}\text{C } \Delta T$

Climate Change 2014  
Synthesis Report  
Summary for Policymakers

*“Both the public and private sectors have a role to play in the development and implementation of adaptation [and mitigation] measures (high confidence).”*

IPPC, 2014

## Present

- 1** Spain's construction sector has lost 1.7 million jobs since its peak
- 2** Spain is 76% dependent on foreign energy which severely impacts its commercial deficit
- 3** Spain's existing buildings use 1/3 of its energy and are very inefficient
- 4** Spain's energy companies are not incentivized to offer customer energy savings
- 5** 2013 Spanish legislation begins to develop a Buildings Renovation Sector together with some public finance
- 6** The "value proposition" for Spanish property owners of a deep renovation is virtually unknown

### NATIONAL RENOVATION STRATEGY

## Future

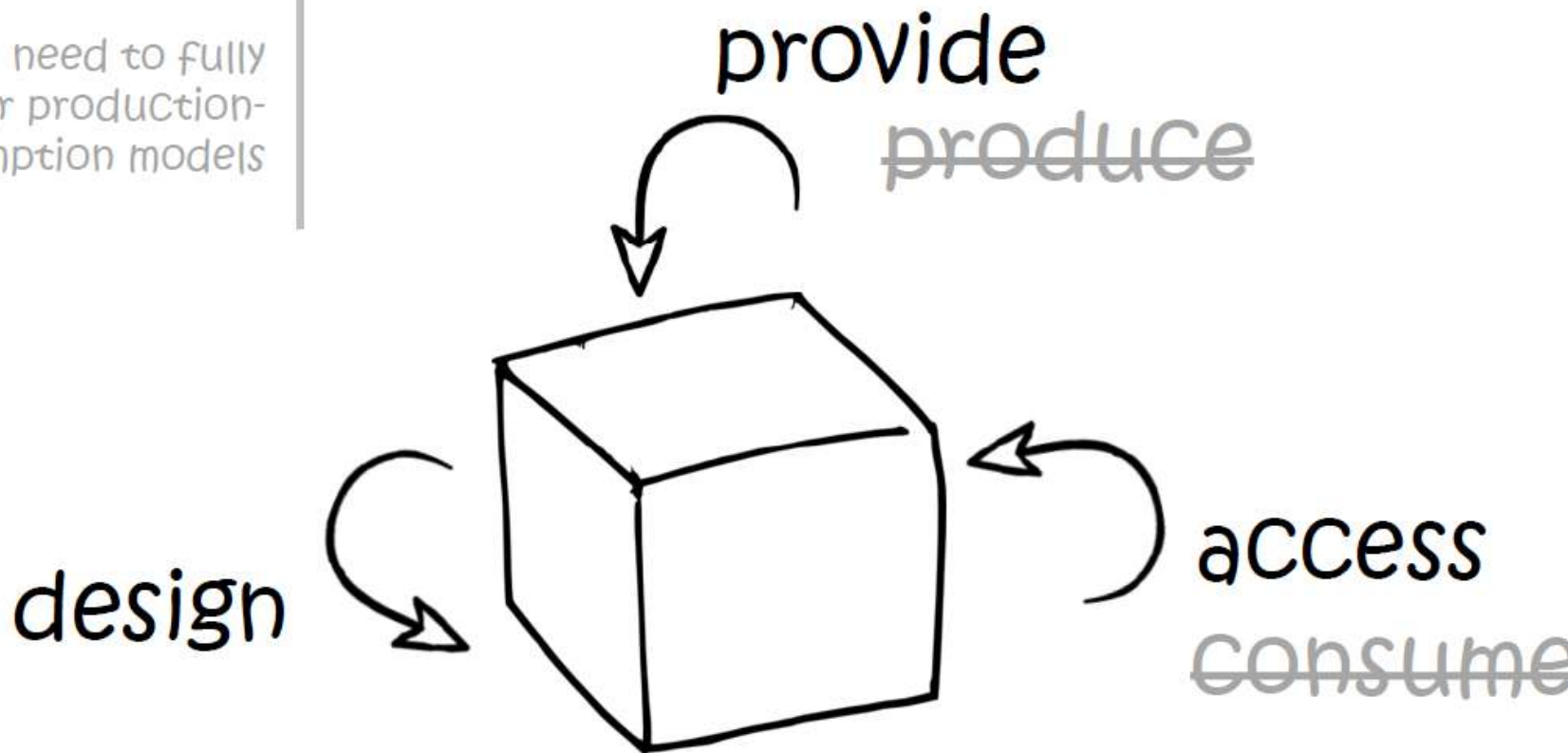
- 1** 150,000 new jobs can be created through the energy efficient renovation of Spanish homes. In addition other tens of thousands of jobs can be created through the renovation of non residential buildings
- 2** Demand reduction policies such as the deep renovation of buildings reduce energy dependency and improve the fiscal deficit
- 3** Current technology can cost-efficiently reduce the energy needs of 10 million Spanish homes by 70-80% by 2050. Tertiary buildings can cost effectively save up to 50% of energy needs.
- 4** Through Energy Efficiency Obligations, Spain's energy companies are obliged to offer client energy demand reduction solutions and their model moves to "value added services"
- 5** New legislation facilitates data, financing, a central rehabilitation agency, "one-stop shop" for public support and technical assistance to strengthen the renovation activities of sector stakeholders
- 6** Spanish property owners see value increases, productivity gains, energy savings and increased comfort in renovated buildings.



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need to fully  
rethink our production-  
consumption models

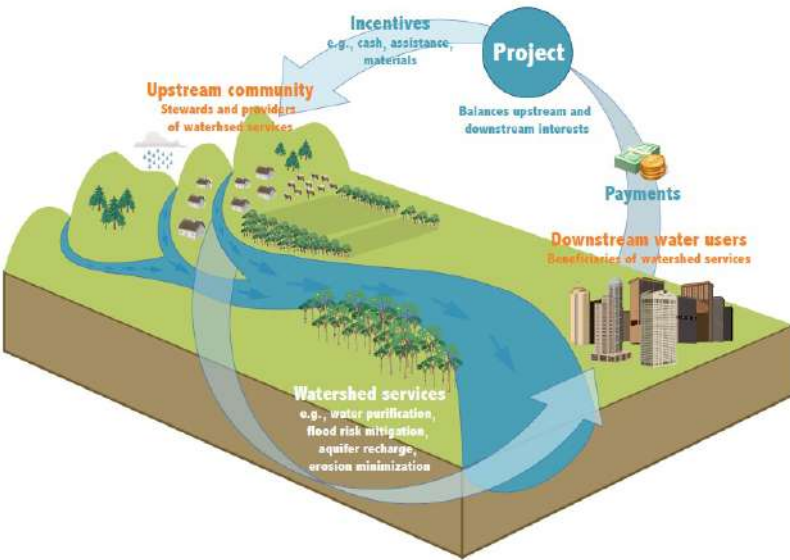




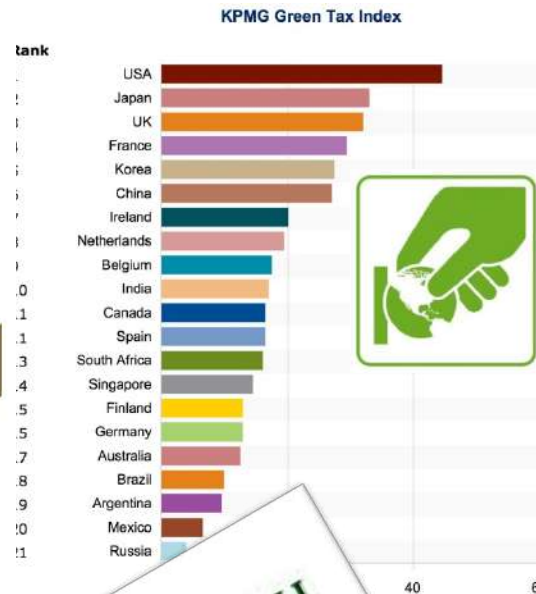
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# Market-based tools on Natural Capital & Biodiversity

## Payments for Ecosystem Services (PSE)



## Public incentives



## Sustainable Forestry



## SmartForest



## New business models



# ferrovial Carbon pricing

TIME HORIZON	GEOGRAPHIES	PROJECT TYPE
2020	AUSTRALIA PERU	AIRPORTS
2030	BRASIL POLAND	HIGHWAYS & TOLL ROADS
2040	CANADA PORTUGAL	WASTE MANAGEMENT FACILITIES (LANDFILL)
2050	CHILE SPAIN	WATER MANEGEMENT FACILITIES
	GERMANY UNITED KINGDOM	ENERGY ASSETS (NATURAL GAS)
	IRELAND UNITED STATES	
	MEXICO CALIFORNIA	
	MIDDLE EAST	

The average carbon prices in the different time horizons are approximately:

2020	2030	2040	2050
16€	66€	79€	134€



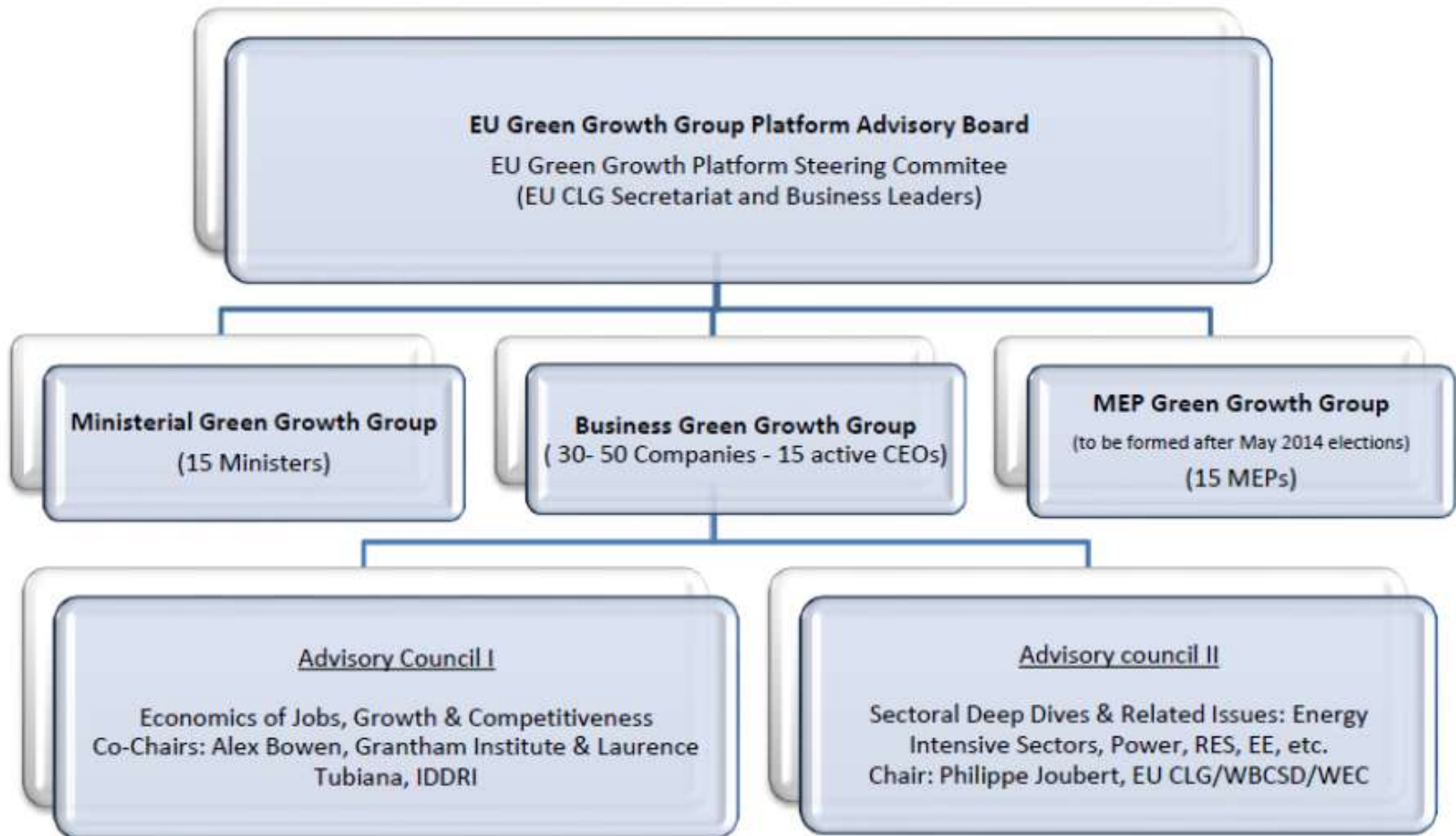
S&P Dow Jones Indices  
ESG Analysis

CLIMATE & STRATEGY  
PARTNERS

**Assessing Climate risk of major investments**

[illegible]

# European Green Growth Group





# G Spanish Green Growth Group



I Foro del Grupo Español para el Crecimiento Verde. MAGRAMA, noviembre de 2014

**Established in 2014 as a Public-Private partnership with Spanish Ministry of Environment. SGGG is currently an independent business association**  
*(about 50% of Ibex35 in sales, 5% of Spain employment)*



<http://www.ferrovial.com/en>



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**Ferrovial**

@Ferrovial; @valentinfaya

**intelligent** infrastructure

Ferrovial's blog on innovation, transport and cities of the future

<http://blog.ferrovial.com/en//>