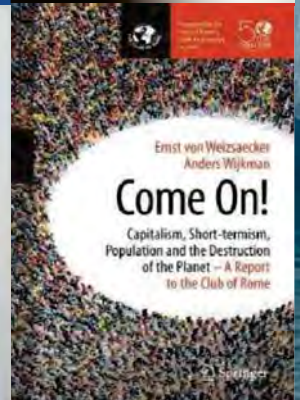
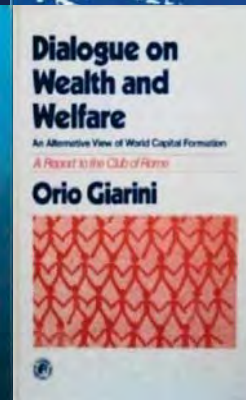
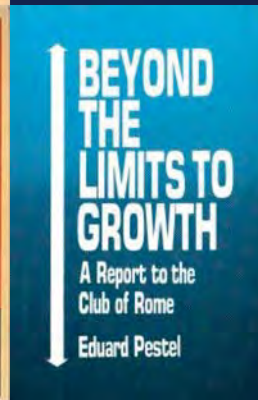
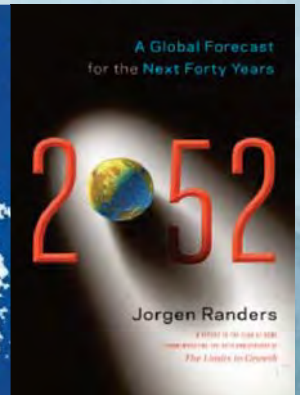
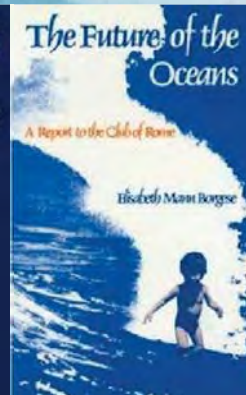
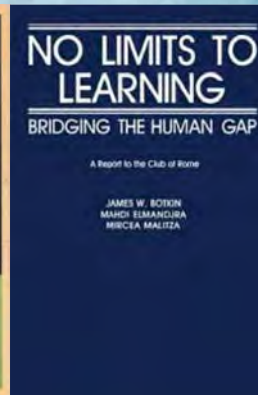




# CLIMATE CHANGE: TREADING ON THIN ICE - PLAYING WITH FIRE!

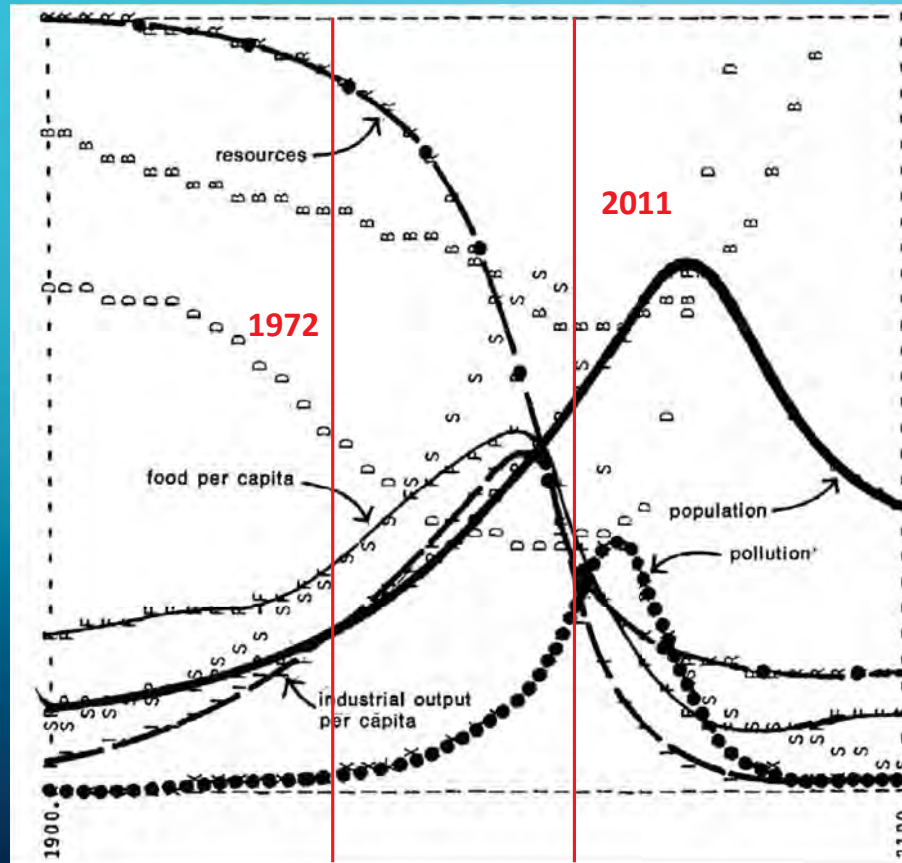
SANDRINE DIXSON-DECLÈVE, PRESIDENT, THE CLUB OF ROME & CLIMATE KIC ADVISORY BOARD - MEMBER OF EU SUSTAINABLE FINANCE TECHNICAL EXPERT GROUP

# CLUB OF ROME - FLAGSHIP REPORTS





# THE LIMITS TO GROWTH – 1972

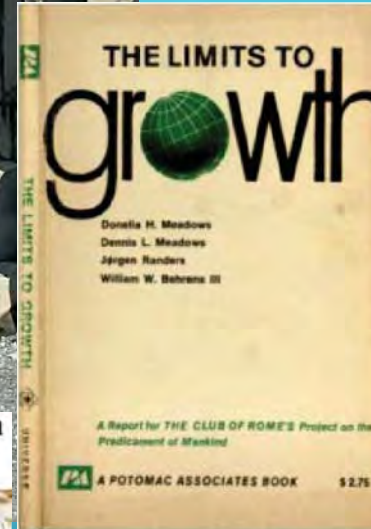


D H. Meadows, et. al.,  
*The Limits to Growth*,  
Universe Books, New  
York, NY, 1972 p. 124

# SYSTEMS FRAGILITY - PLANET INFECTED BY HOMO-SAPIENS

SPECIAL REPORT

## Global Warming of 1.5 °C



Ernst Ulrich von Weizsäcker  
Anders Wijkman

## Come On!

Capitalism, Short-termism,  
Population and the Destruction  
of the Planet – A Report  
to the Club of Rome



Plummeting insect numbers 'threaten  
collapse of nature'



The Guardian, 10 Feb. 2019



**U.N. REPORT WARNS  
40% OF POLLINATORS  
FACE EXTINCTION**

FEBRUARY 29TH, 2016  
POSTED BY CAROL CLARKE-EMERY

"Pollinator decline is a multi-faceted issue with many drivers contributing to it," says Harry Brzos, pictured above. "He can't just fix one thing and have the problem go away." (Credit: Bryan Helts/Emory)



# SYSTEMS FRAGILITY – ECONOMIC & FINANCIAL COSTS

Economic cost of Hurricane Irma 'could reach \$300bn'

Experts say insurance firms could be liable for up to half that sum after Irma damages homes, businesses and key crops



## CHALLENGE AND OPPORTUNITY

The recent Intergovernmental Panel on Climate Change (IPCC) report on the impact of 1.5 °C and 2°C warming above pre-industrial levels<sup>1</sup> sends a stark reminder to humanity about the existential threat posed by climate change. To avoid the worst of the predicted outcomes, global carbon emissions must be cut by half by 2030, to zero by 2050. This is an unprecedented task, requiring a reduction rate of at least 7% annually; no country has to date achieved more than 1.5%. The only possible response is emergency action that will transform human social, economic and financial systems.

HIDDEN FIGURES

**Global disasters in 2017 cost \$306 billion—nearly double the cost of 2016**

By Akshat Rathi - DECEMBER 21, 2017



South and southeast Asia suffered catastrophic floods in 2017 leading to more than 1,200 deaths and displacement of tens of thousands.

IPPR report Feb. 2019 - Since 1950 global increase  
**FLOODS: by 15x. EXTREME TEMP. EVENTS by 20x.  
WILDFIRES by 7x.**

**"We define this as the 'age of environmental breakdown' to better highlight the severity of the scale, pace and implications of environmental destabilisation resulting from aggregate human activity."**

# SYSTEMS FRAGILITY – COSTS OF INACTION

- **Costs of inaction far outweigh the costs of action!**

- Just four global warming impacts alone – hurricane damage, real estate losses, energy costs, and water costs – will cost 1.8 percent of U.S. GDP, almost \$1.9 trillion annually by 2100
- 1.8% of global assets (approx. \$2.5trillion) are at risk under current mitigation trajectories, but if warming is capped below 2°C these costs reduce to 0.2%.
- US government analysis: US face up to \$180 billion in economic losses due to drought and water shortages

- **Global action to limit warming to 2°C would:**

- Make \$200 billion in savings to the American economy by 2100
- Prevent \$50 million to \$6.4 billion in adaptation costs to urban drainage systems in the US
- Reduce costs to farmers of \$2.6 billion to \$3.1 billion
- Reduced use of coal and other polluting fuels, meeting the US' Paris target was expected to "prevent in the order of 7,000 premature deaths
- Cost of not acting on climate will be \$44trn by 2060



# SYSTEMS FRAGILITY – LAW AND ORDER ! (?)

## IN BREXIT THEY TRUST

Ultra-wealthy BREXIT-RATS abandoning the sinking ship

*John Redwood Lord Lawson Jacob Rees-Mogg Lord Ashcroft Sir Jim Ratcliffe*



Advised clients to move money out of UK to EU	Has become a permanent French resident	Setting up shop in Dublin to stay in Single Market	Told British Co.s to move to Malta to stay in the EU	Moving business and his £billions to Monaco...
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## The Economist

AUGUST 25TH-31ST 2018

A journey down the Kapuas  
Making migration work  
Venezuela's magical thinking  
Global cooling

# Above the law?



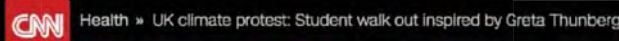
REUTERS/Chris Lanning/Pool

CLIMATE DESK

### Trump just gave Putin a huge gift, and no one seems to have noticed

By Rebecca Lister on Jun 9, 2017

# SYSTEMS FRAGILITY – SOCIO-POLITICAL DYNAMICS

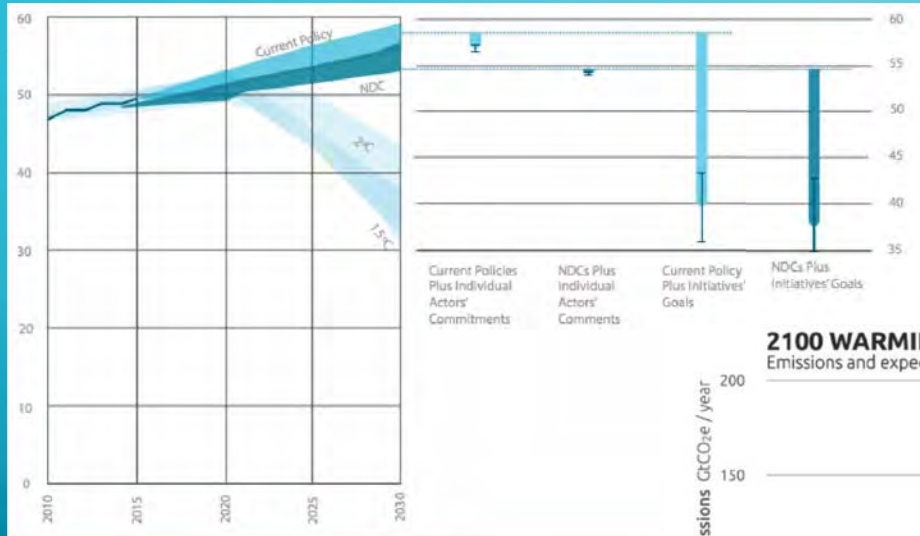






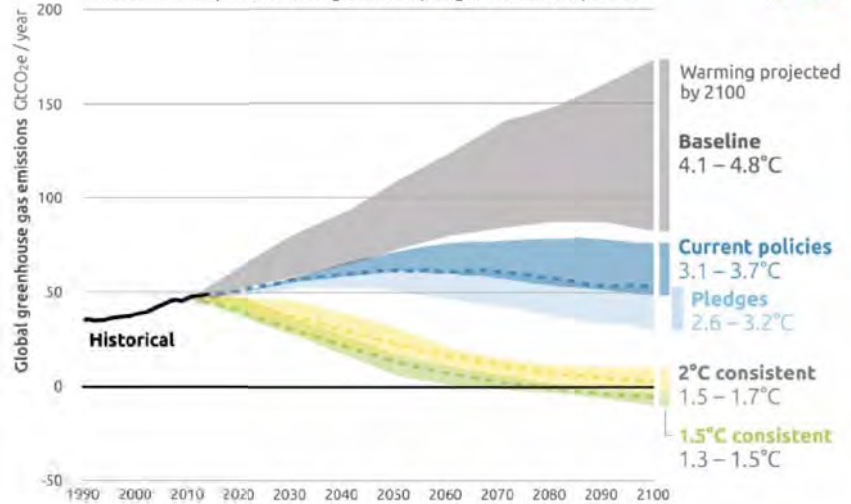
# CLIMATE EMERGENCY: POSSIBLE SOLUTIONS

# INTERNATIONAL CLIMATE LANDSCAPE – A REALITY CHECK!



## 2100 WARMING PROJECTIONS

Emissions and expected warming based on pledges and current policies



YALE, NEW CLIMATE INSTITUTE AND DUTCH GOVERNMENT REPORT SEPT. 2018



# EMERGENCY – NON STATE ACTOR ENGAGEMENT

## GLOBAL CLIMATE ACTION FROM CITIES, REGIONS, AND BUSINESSES

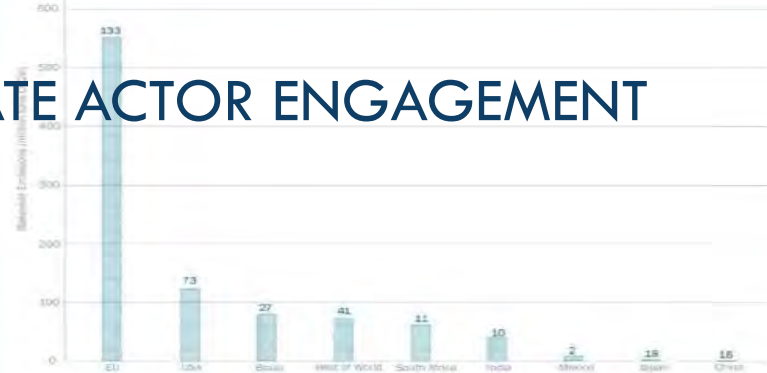


Figure 9  
Combined revenue (in trillion USD) of companies with climate commitments as tracked by CDP. (Data Source: CDP 2017 Climate Investor and SC Disclosure Surveys; Revenue data from Bloomberg).

6  
C40 Cities, Global Covenant of Mayors, Climate Alliance, Climate Mayors, Under2 Coalition, We Are Still In, Compact of States and Regions, EU Covenant of Mayors, Carboneo, CDP Cities.

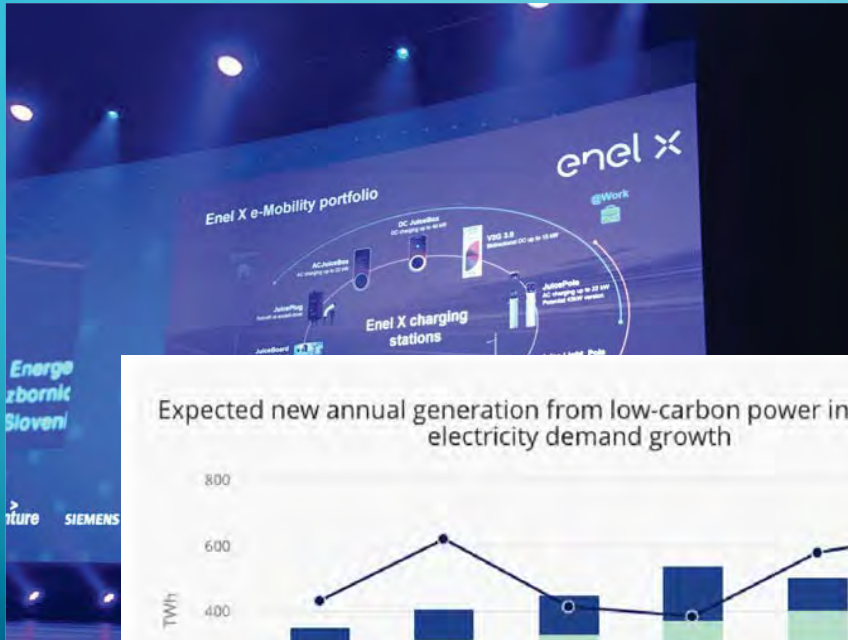
### Commitments

We evaluate nearly 6,000 quantifiable emission reduction commitments from subnational actors in the 10 focus regions in our study that have committed to quantifiable emissions reductions commitments with target years, with the vast majority (96%) focused on pre-2020 action. The EU

Individual actors, collective initiatives and their impact on global greenhouse gas emissions



# EMERGENCY - TRANSFORMATION VS INCREMENTALISM



## Commentary: Decline in renewables investment is a warning signal for clean energy transitions



By Michael Waldron  
Energy Investment Analyst  
24 July 2018

Expected new annual generation from low-carbon power investments vs electricity demand growth



capacity additions rose to a new high in 2017, supported by a more than 25% falliations (Photograph: Shutterstock)

renewable energy declined by 7% in 2017, its largest fall in over in the IEA's *World Energy Investment* report.



## EMERGENCY - WHAT MAKES CLIMATE ACTION AFFORDABLE?

1. Many solutions require large upfront investments, but save money over time – such as improving energy efficiency
2. The costs of many solutions have dropped dramatically over the past years, most notably solar power
3. Affordability was one criterion in selecting the solutions – including other solutions could raise the total costs

## EMERGENCY – AFFORDABLE SOLUTIONS

In 2030,  
17 solutions  
would cost at most

**17%**  
of how much  
we subsidise  
fossil fuels today

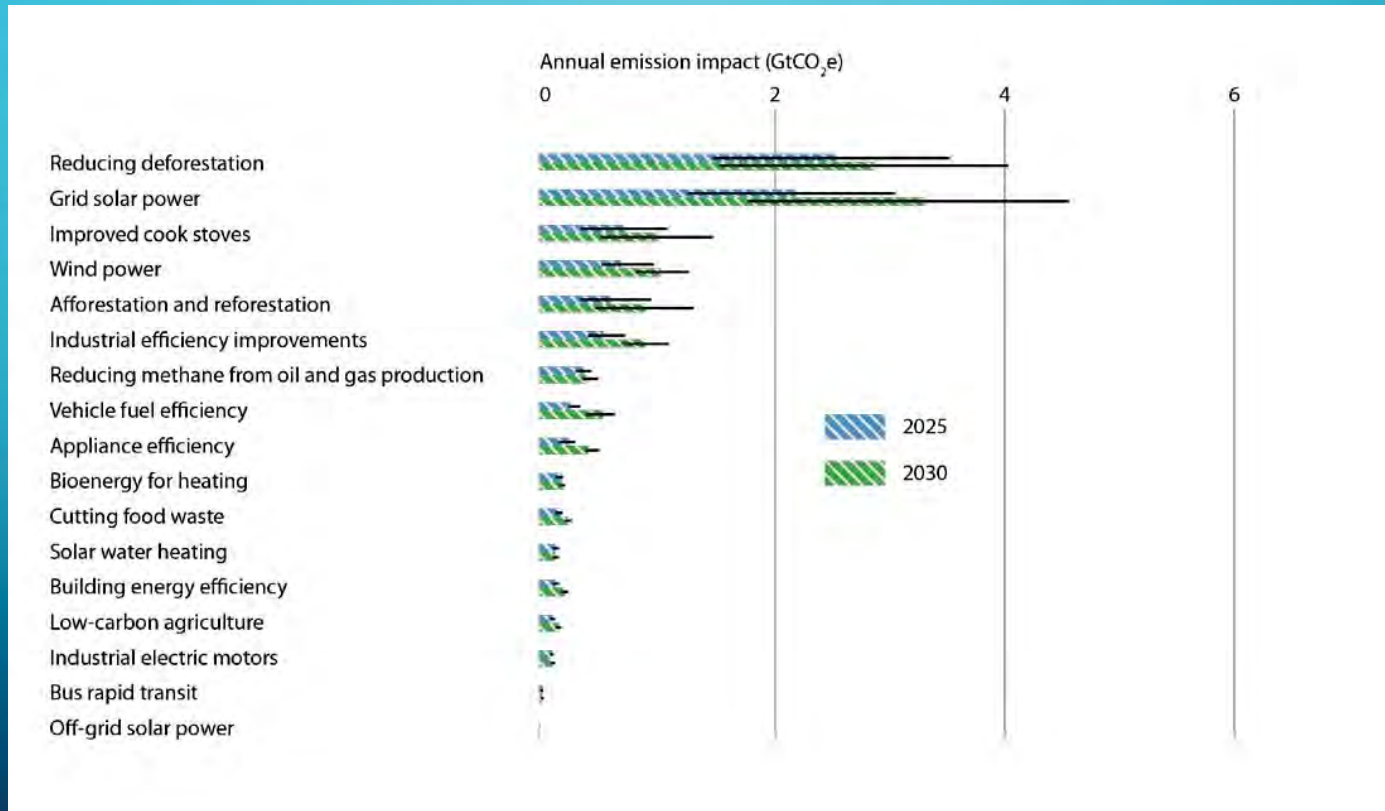
Direct fossil  
fuel subsidies  
in 2015 are

**\$548  
billion**  
globally





# EMERGENCY - PROVEN SOLUTIONS





# CLIMATE EMERGENCY: ACTION & TRANSFORMATION



# CLIMATE ACTION - TRANSFORMATION IS FEASIBLE

## *Transformation is Feasible:*

- Humanity can achieve the SDGs whilst remaining within planetary boundaries.
- Change conventional policy tools – and growth models – High human footprint, risking irreversible decline in Earth life-supporting systems.



transformational approach will ensure dual aim met through a concrete, smarter pathway based on five transformative & synergistic actions:

1. Accelerated renewable energy growth
2. Accelerated productivity in sustainable food chains
3. New development models in poorer countries
4. Unprecedented inequality reduction
5. Investment in education for all, gender equality and family planning

# CLIMATE ACTION – EMERGENCE FROM EMERGENCY

## THE CLUB OF ROME CLIMATE EMERGENCY PLAN

A Collaborative Call for Climate Action



By Members of the Club of Rome,  
Sandrine Dixon-Declève, Jan Brink, Anders Wijkström  
with support from Markus Höglberg & Till Kollmann



With this emergency paper, the Club of Rome is attempting to respond to the direct calls for action from citizens around the world, and to formulate a plan that will meet suitably ambitious reduction targets and ensure climate stability.

## THE GREAT TRANSFORMATION

CLIMATE – CAN WE BEAT THE HEAT?



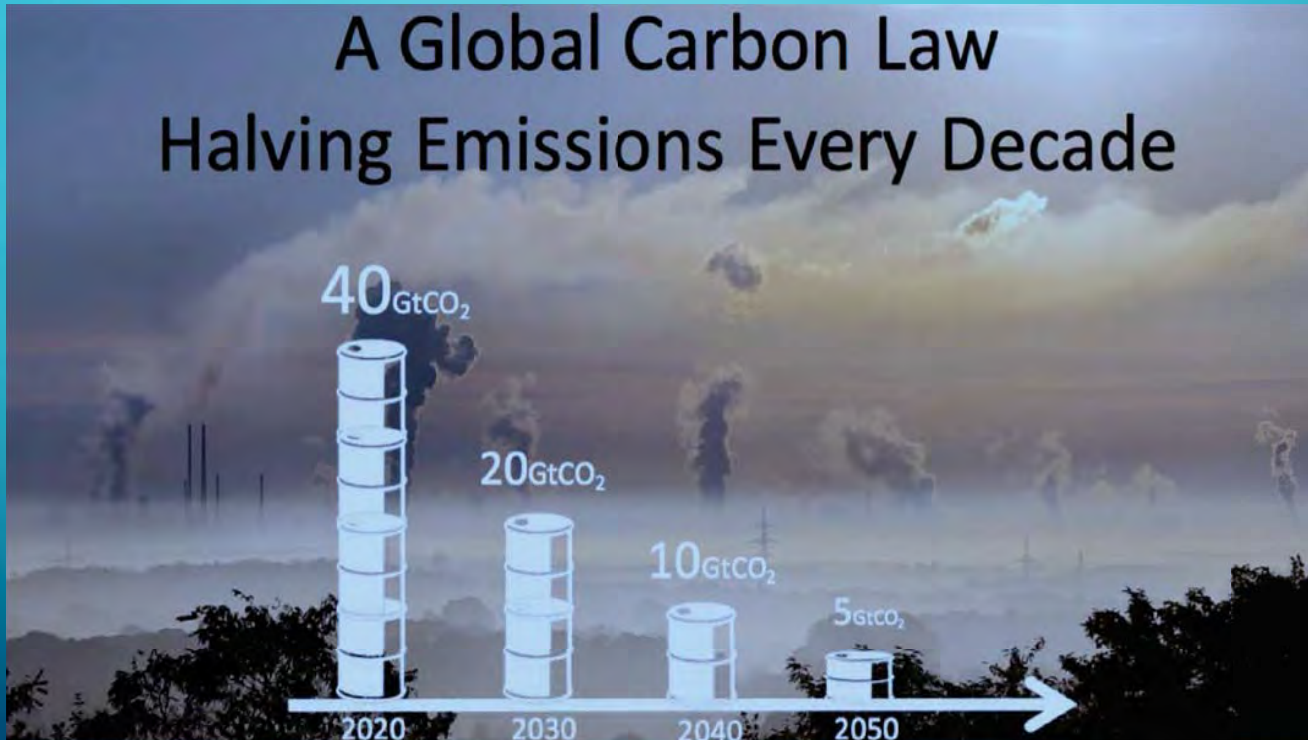
*"The ravages of a rapidly warming climate are happening every day and will only get worse especially for the world's most vulnerable. Transformational climate action is an opportunity for a societal renaissance of the proportions never seen before. This is a global emergency plan for a shared and just future. We have the technology and capital but most NDC's and industry efforts are not ambitious enough. The only option now is adopting an emergency plan! Time is not going to be forgiving."*

— Sandrine Dixon-Declève, Co-President of the Club of Rome



# CLIMATE ACTION – EMERGENCE FROM EMERGENCY

## A Global Carbon Law Halving Emissions Every Decade



Exponential Climate Action Roadmap, 2018

# CLIMATE ACTION - EMERGENCE FROM EMERGENCY

CLIMATE EMERGENCY PLAN | THE CLUB OF ROME  
[www.clubofrome.org](http://www.clubofrome.org)

## Call to Action #1

**Halt fossil fuel expansion and fossil fuel subsidies by 2020**

#ClimateEmergencyPlan



CLIMATE EMERGENCY PLAN | THE CLUB OF ROME  
[www.clubofrome.org](http://www.clubofrome.org)

## Call to Action #2

**Continue the doubling of wind and solar capacity every four years, and triple annual investments in renewable energy, energy efficiency and low-carbon technologies for high-emitting sectors before 2025.**

#ClimateEmergencyPlan



CLIMATE EMERGENCY PLAN | THE CLUB OF ROME  
[www.clubofrome.org](http://www.clubofrome.org)

## Call to Action #3

**Introduce realistic pricing and taxation to reflect the true cost of fossil fuel use and embedded carbon by 2020**

#ClimateEmergencyPlan



CLIMATE EMERGENCY PLAN | THE CLUB OF ROME  
[www.clubofrome.org](http://www.clubofrome.org)

## Call to Action #4

**Replace GDP growth as the main objective for societal progress**

#ClimateEmergencyPlan





CLIMATE EMERGENCY PLAN | THE CLUB OF ROME  
www.clubofrome.org

**Call to Action #5**

**Improve  
refrigerant  
management by  
2020**

#ClimateEmergencyPlan

CLIMATE EMERGENCY PLAN | THE CLUB OF ROME  
www.clubofrome.org

**Call to Action #6**

**Encourage  
exponential  
technology  
development by 2020**

#ClimateEmergencyPlan

CLIMATE EMERGENCY PLAN | THE CLUB OF ROME  
www.clubofrome.org

**Call to Action #7**

**Ensure greater  
materials efficiency  
and circularity by  
2025**

#ClimateEmergencyPlan



# CLIMATE ACTION - EMERGENCY FROM EMERGENCY

CLIMATE EMERGENCY PLAN | THE CLUB OF ROME  
[www.clubofrome.org](http://www.clubofrome.org)

### Call to Action #8

**Accelerate regenerative land use policies**

#ClimateEmergencyPlan



CLIMATE EMERGENCY PLAN | THE CLUB OF ROME  
[www.clubofrome.org](http://www.clubofrome.org)

### Call to Action #9

**Ensure that population growth is kept under control by giving priority to education and health services for girls and women; promote reproductive health and rights, including family planning programmes.**

#ClimateEmergencyPlan



CLIMATE EMERGENCY PLAN | THE CLUB OF ROME  
[www.clubofrome.org](http://www.clubofrome.org)

### Call to Action #10

**Provide for a just transition in all affected communities.**

#ClimateEmergencyPlan



# CLIMATE ACTION - EMERGENCY FROM EMERGENCY



# CLIMATE ACTION – THE ROLE OF FINANCE

## EU Sustainability Policies

### Climate and Energy

- 2030 Climate and Energy Framework
- Energy Union Package
- EU Strategy on Adaptation to Climate Change

### Environment

- Circular Economy Package (Action Plan)
- Clean Air Policy
- 7th Environmental Action Programme

### Investment and Growth

- Investment Plan for Europe (Fund for Strategic Investment (EFSI); InvestEU; EU cohesion policy funds)
- External investment plan
- Horizon 2020

### Sustainable Finance

- Sustainable Finance within the Capital Markets Union

- Long-term strategy to reach carbon neutrality by 2050

Sustainable Finance is one of the EU Sustainability Policy Pillars.

# CLIMATE ACTION – THE ROLE OF FINANCE

The EU committed to **three ambitious climate and energy targets for 2030** in line with the UN 2030 Agenda, the SDGs and the Paris Agreement. In its **long-term strategy**, the EU strives for **net-zero GHG emissions by 2050**.



Minimum **40%** cut in greenhouse gas emissions compared to 1990 levels



At least a **32%** share of renewables in final energy consumption



At least **32,5%** energy savings compared with the business-as-usual scenario

**Public money**

The yearly investment gap to meet these targets is estimated to be **between € 175 to 290 billion.**

**Private money**

Public supporting schemes alone will not be sufficient to meet those investment needs. The private sector will have to play a huge role and a smart policy framework is needed to incentivise private investment.

Sources: [EIB: Restoring EU competitiveness \(2016\)](#), [European Commission: A clean planet for all \(2018\)](#), [European Commission: Commission Work Programme 2019](#).



# CLIMATE ACTION – THE TAXONOMY PROPOSAL

**What is the Taxonomy?**

**A list of economic activities** that are considered environmentally sustainable for investment purposes.

**What is set out in the Proposal?**

**The framework to develop the taxonomy.** For an economic activity to be on the list, it has to comply with four conditions:

(a) **Substantially contribute** to at least one of the six environmental objectives as defined in the proposed Regulation\*



(b) **Do no significant harm** to any of the other six environmental objectives as defined in the proposed Regulation\*



(c) Comply with **minimum safeguards**



(d) Comply with quantitative or qualitative **Technical Screening Criteria**

The six environmental objectives as defined in the proposed Regulation are: (1) climate change mitigation; (2) climate change adaptation; (3) sustainable use and protection of water and marine resources; (4) transition to a circular economy, waste prevention and recycling; (5) pollution prevention and control; (6) protection of healthy ecosystems.

Source: [European Commission: Proposal on the establishment of a framework to facilitate sustainable investment \(2018\)](#).

# CLIMATE ACTION – FOUR NEW EU FINANCE REPORTS

Report on climate-related disclosure

Report on the EU Taxonomy

Report on the EU Green Bond Standard

Interim report on climate benchmarks  
and benchmarks' ESG disclosures

In June, the Commission followed up on this report by publishing new guidelines for companies on how to report climate-related information.







**CLIMATE EMERGENCY:  
COLLABORATION & EMERGENCE**

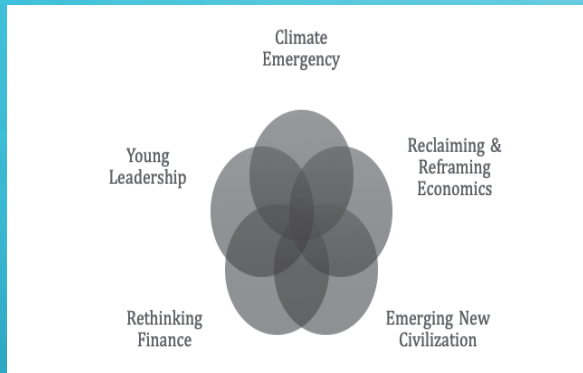
# EMERGENCE FROM EMERGENCY - THE CLUB OF ROME



- The Club of Rome is an organisation of individuals who share a common concern for the future of humanity and strive to make a difference.
- Our members are notable scientists, economists, businessmen and businesswomen, high level civil servants and former heads of state from around the world. Their efforts are supported by [National Associations](#) in more than 30 countries.
- That makes us one of the largest networks of sustainability change agents in the world! Networks are crucial for solving the issues facing humanity in the 21<sup>st</sup> century, such is their complexity.
- Convening the **CoR's diversity** around a common purpose, harnesses the multidisciplinary expertise and problem-solving capabilities needed to solve these complex problems.
- This **uniqueness** is rooted in the Club's founding notion of '**problematique**', which recognises the need to approach humanity's complex problems through a systemic, multidisciplinary and holistic lens.



# EMERGING FROM EMERGENCY- COLLABORATIVE IMPACT HUBS



Implementation **architecture** = the **CoR Impact Hub**:

- **allows added value** inherent in the Platform to be leveraged across the Club's **five pillars of activity**.
  - Impact Hubs: will be the **CoR's main delivery mechanism for collective action**,
- 
- will serve as **creative impact space** where Club of Rome members, associations and partners (governments, companies, universities, international institutions, NGOs, esteemed influencers etc...) will share transformational thought leadership and co-design solutions for impact.

# CAN WE CREATE A WORLD IN BALANCE ?

- EMERGENCY PLAN ACROSS ALL JURISDICTIONS
- ACTION NOW FOR RESILIENCE LATER
- TRANSFORMATIONAL NOT INCREMENTAL
- COLLABORATIVE NOT INDIVIDUAL
- BUSINESS UNUSUAL NOT BAU
- MORE STRATEGIC & TARGETED
- RISK TAKING AN ABSOLUTE
- JUST TRANSITION & BUFFERS
- CIRCULARITY VS LINEARITY
- PRAGMATIC YET RADICAL
- PRICING WHAT MATTERS

**BE THE LEADER THAT YOU WANT TO SEE – OUR MOONSHOT IS PLANET EARTH!**

