Austrian Presidency of the Council of the European Union

GROWTH in TRANSITION

4TH INTERNATIONAL CONFERENCE

EUROPES TRANSFORMATION: WHERE PEOPLE MATTER

14 – 15 November 2018 Austria Center Vienna

www.growthintransition.eu/conference2018/ facebook: wiw_conference #eugit2018

This project has received funding from the European Union Horizon 2020 research and innovation programme under grant agreement No 811144.

Transformations toward sustainable future

disruptive technologies and lifestyles

Nebojsa Nakicenovic
Deputy Director General, Deputy CEO
International Institute for Applied Systems Analysis
Former Full Professor of Energy Economics
Vienna University of Technology

Four Great Achievements since the Beginning of Industrial Revolution

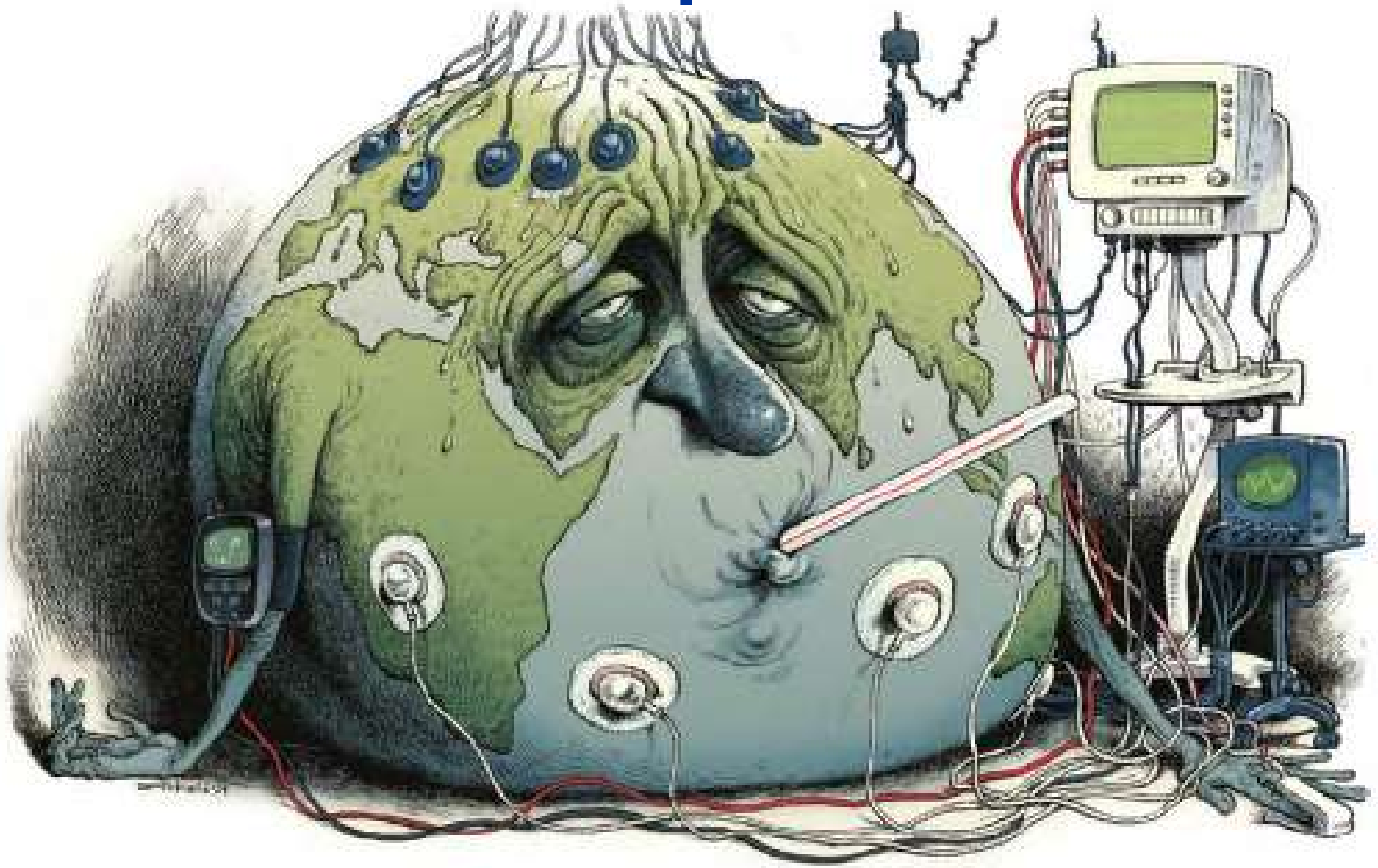
- Life expectancy has doubled in a century
- One billion are obese while less go hungry
- More die by suicide than war and violence
- Everyone in the world has a mobile phone

Mobile Phones Charging

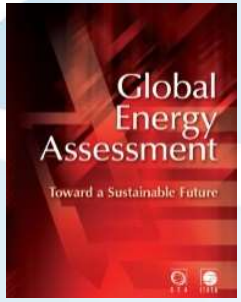
Source: Modi, 2011


This is the size of
ONE TONNE CO_2
Take up the challenge
– reduce every way YOU can
Now!

Collective Responsibility in the Anthropocene




SUSTAINABLE DEVELOPMENT GOALS
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS



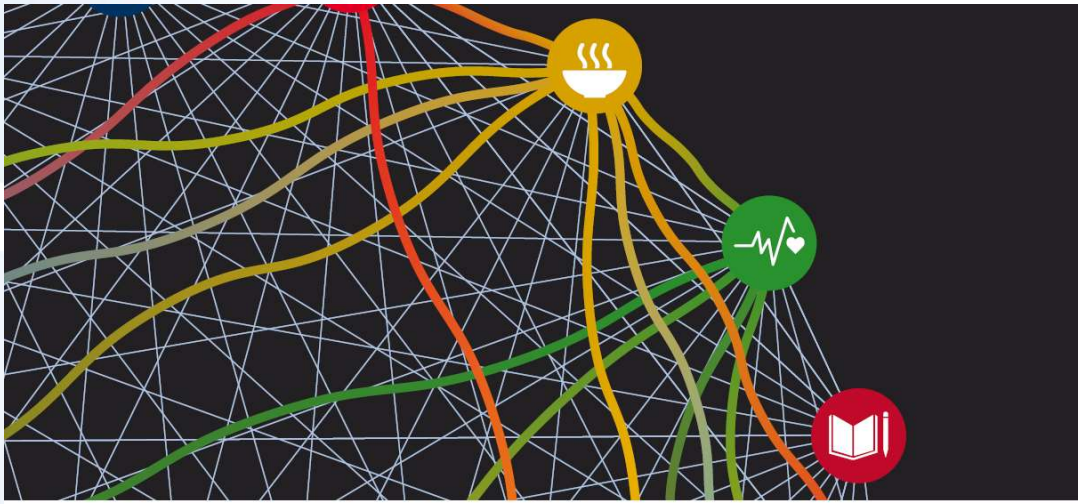
VIENNA ENERGY FORUM

7 AFFORDABLE AND CLEAN ENERGY

2030 Energy Goal (SDG7)

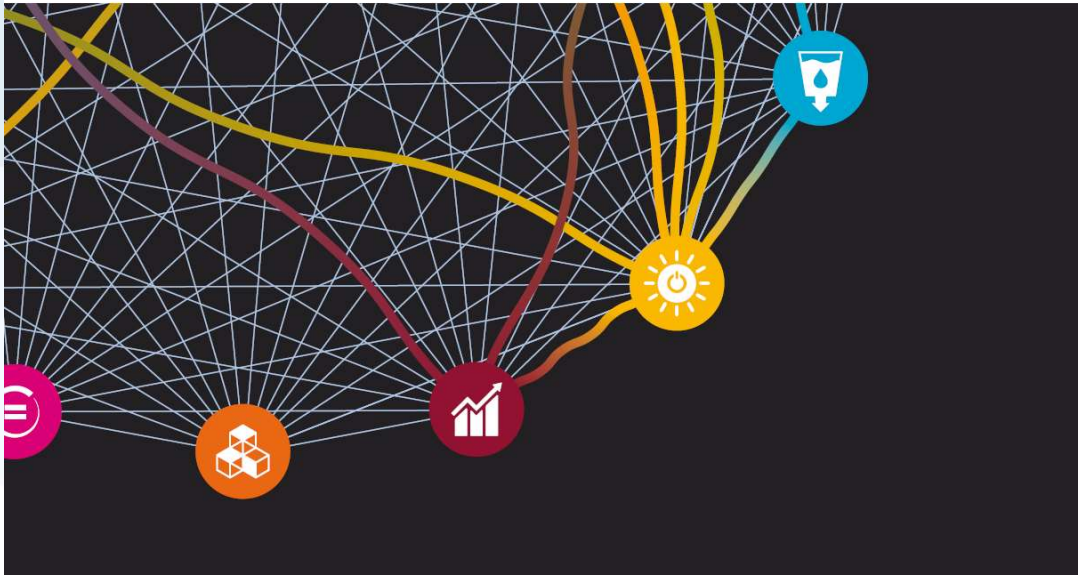
- Universal Access to Modern Energy
- Double Energy Efficiency Improvement
- Double Renewable Share in Final Energy

Aspirational & Ambitious but Achievable



A GUIDE TO
SDG INTERACTIONS:
FROM SCIENCE
TO IMPLEMENTATION

INTERNATIONAL
COUNCIL
FOR SCIENCE

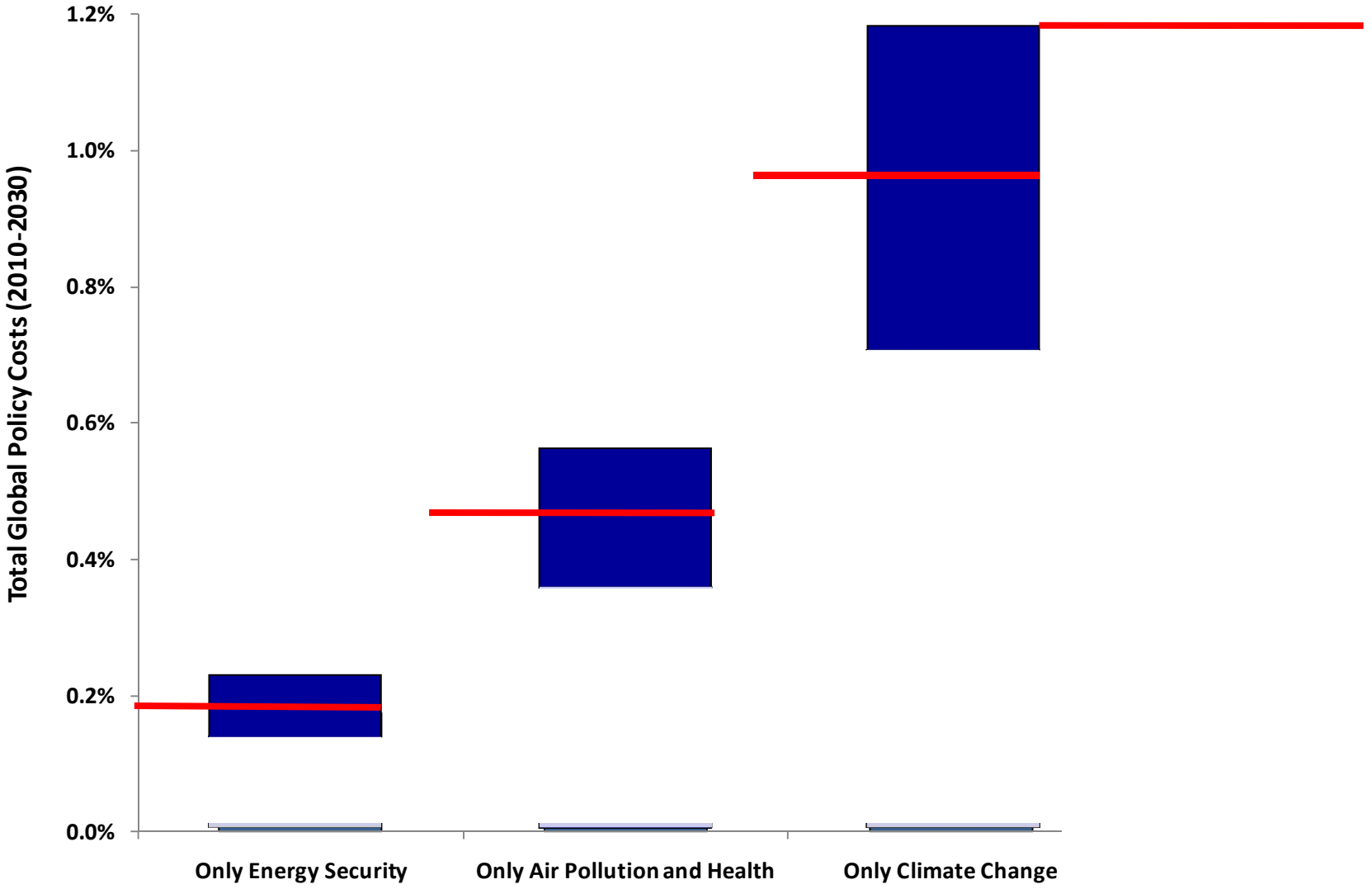


Interactions between SDG 7 & other SDGs

Sustainable Development Goals

1 – No Poverty
2 – Zero Hunger
3 – Good Health and Well-being
4 – Quality Education
5 – Gender Equality
6 – Clean Water and Sanitation
7 – Affordable and Clean Energy
8 – Decent Work and Economic Growth
9 – Industry, Innovation and Infrastructure
10 – Reduced Inequalities
11 – Sustainable Cities and Communities
12 – Responsible Consumption and Production
13 – Climate Action
14 – Life below Water
15 – Life on Land
16 – Peace, Justice and Strong Institutions
17 – Partnerships for the Goals

Multiple Benefits of Integrated Policies



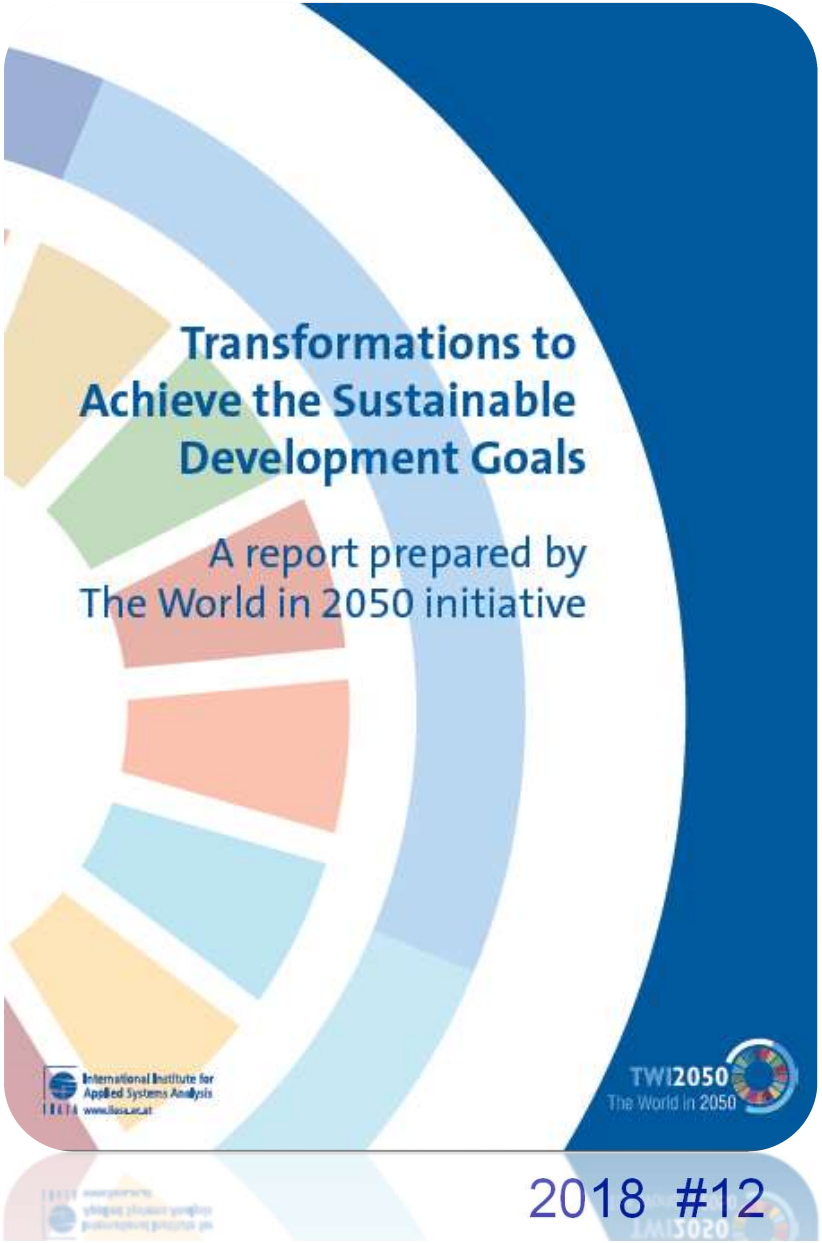
TWI2050 Report (www.TWI2050.org)

Key Messages

Synthesis

1. Framing and Introduction
2. The Challenges Ahead
3. Sustainable Development Pathways
4. Governing the Transformation

- >60 authors from ~20 organizations
- >150 contributors and participants



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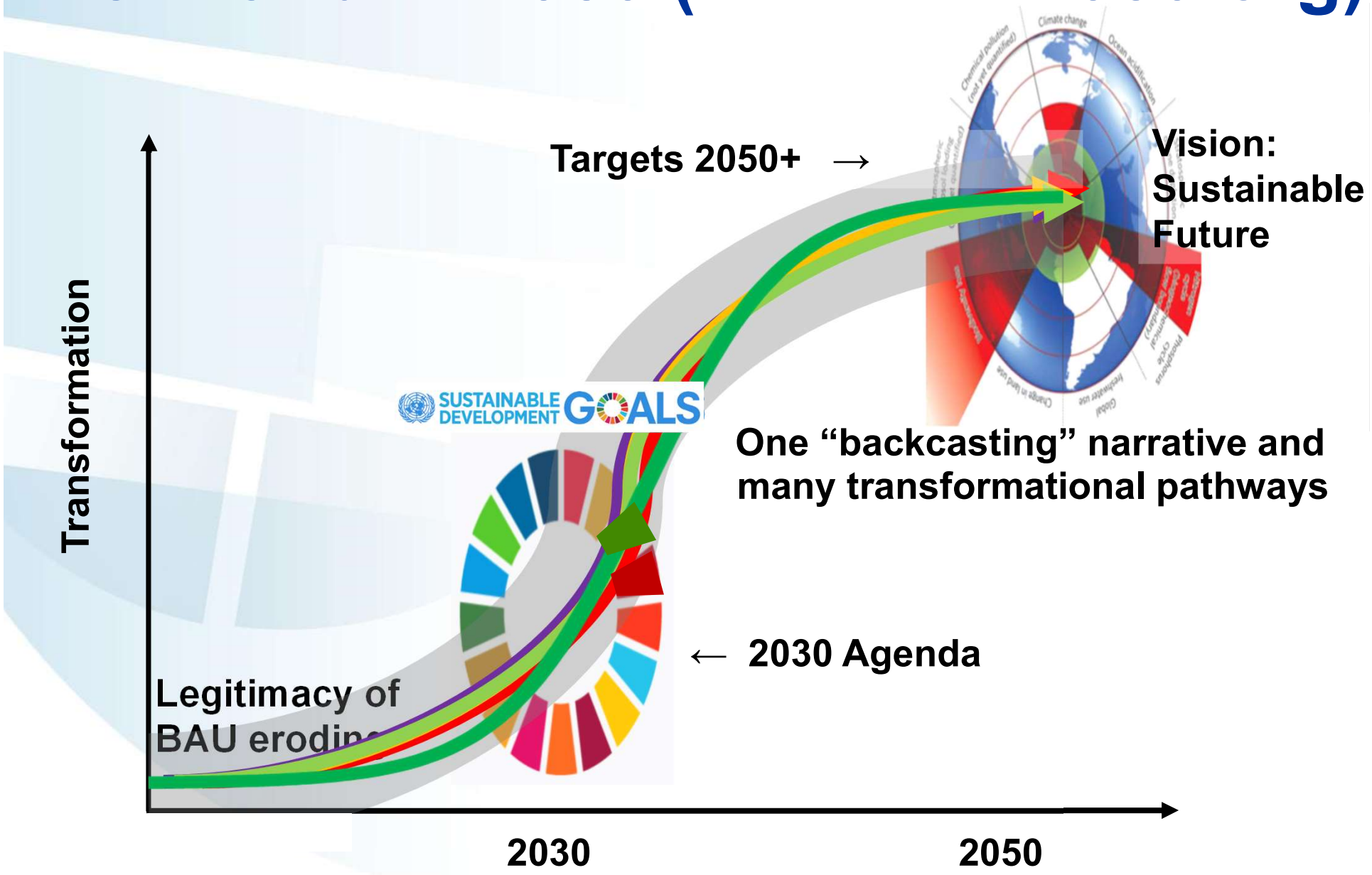
TWI2050 Writing Meeting
5-7 March 2018, IIASA

Some Key Messages

- Attaining the SDGs in a resilient and lasting way, requires vigorous action now, and a people and planet focus beyond 2030!
- As everything is integrated in the connected world, the grand transformation requires a holistic perspective!
- Transformational change is needed but to succeed we must take along winners and losers!
- The world is at crossroads as we are currently experiencing signs of a counter-transformation!
- A central element of the sustainability transformation is effective and inclusive governance!
- Think globally, act locally! Think long-term, act now!

The World in 2050 (www.TWI2050.org)



Six Major Transformations (TWI2050.org)

Digital revolution
Artificial intelligence, big data, biotech, nanotech, autonomous systems

Human capacity & demography
Education, health, ageing, labor markets, gender, inequalities

Smart cities
Decent housing, mobility, sustainable infrastructure, pollution

SDGs:
Prosperity
Social Inclusion
Sustainability

TWI2050
The World in 2050
www.twi2050.org

Consumption & production
Resource use, circular economy, sufficiency, pollution

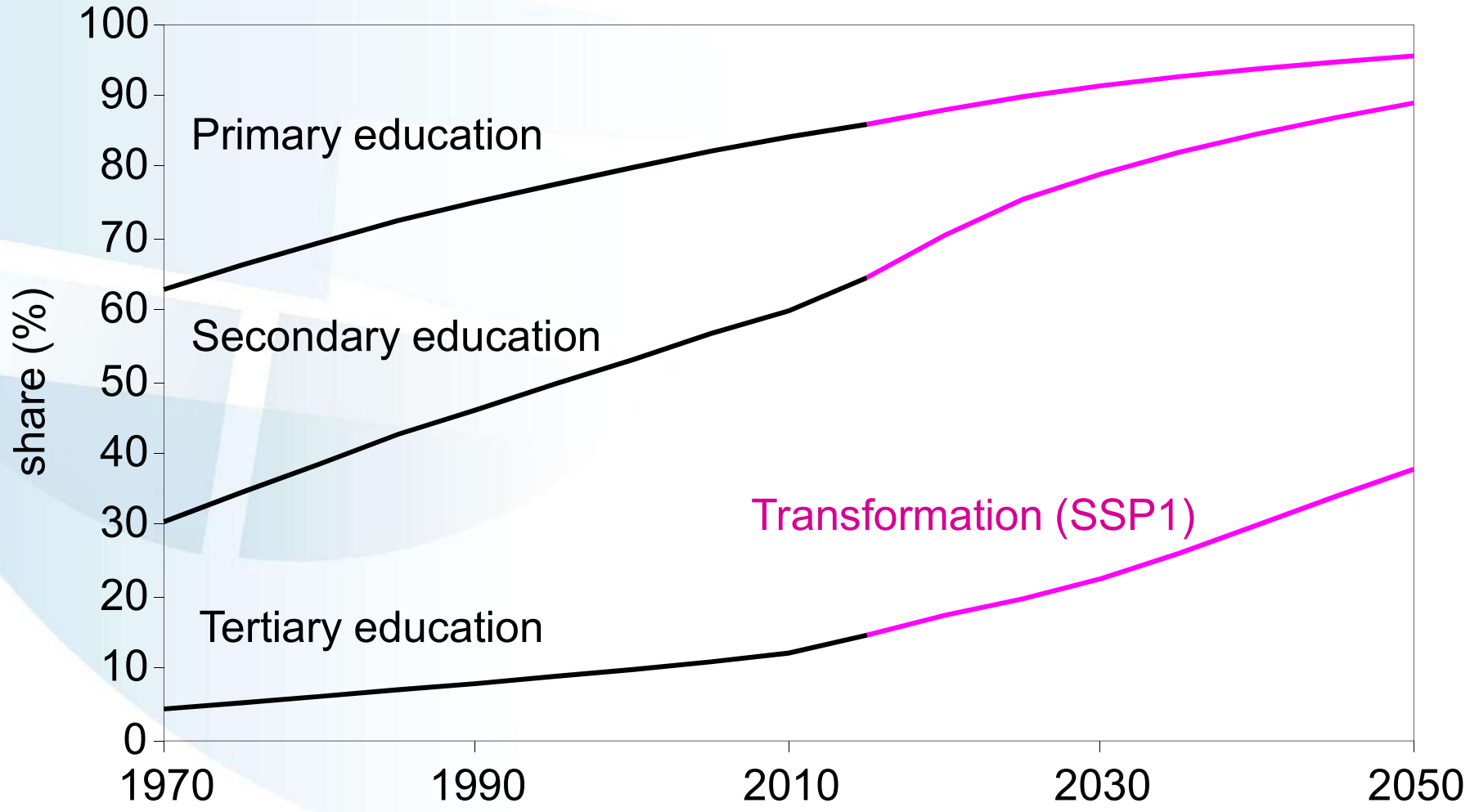
Food, biosphere & water
Sustainable intensification, biodiversity, forests, oceans, healthy diets, nutrients

Decarbonization & energy
Energy access, efficiency, electrification, decent services

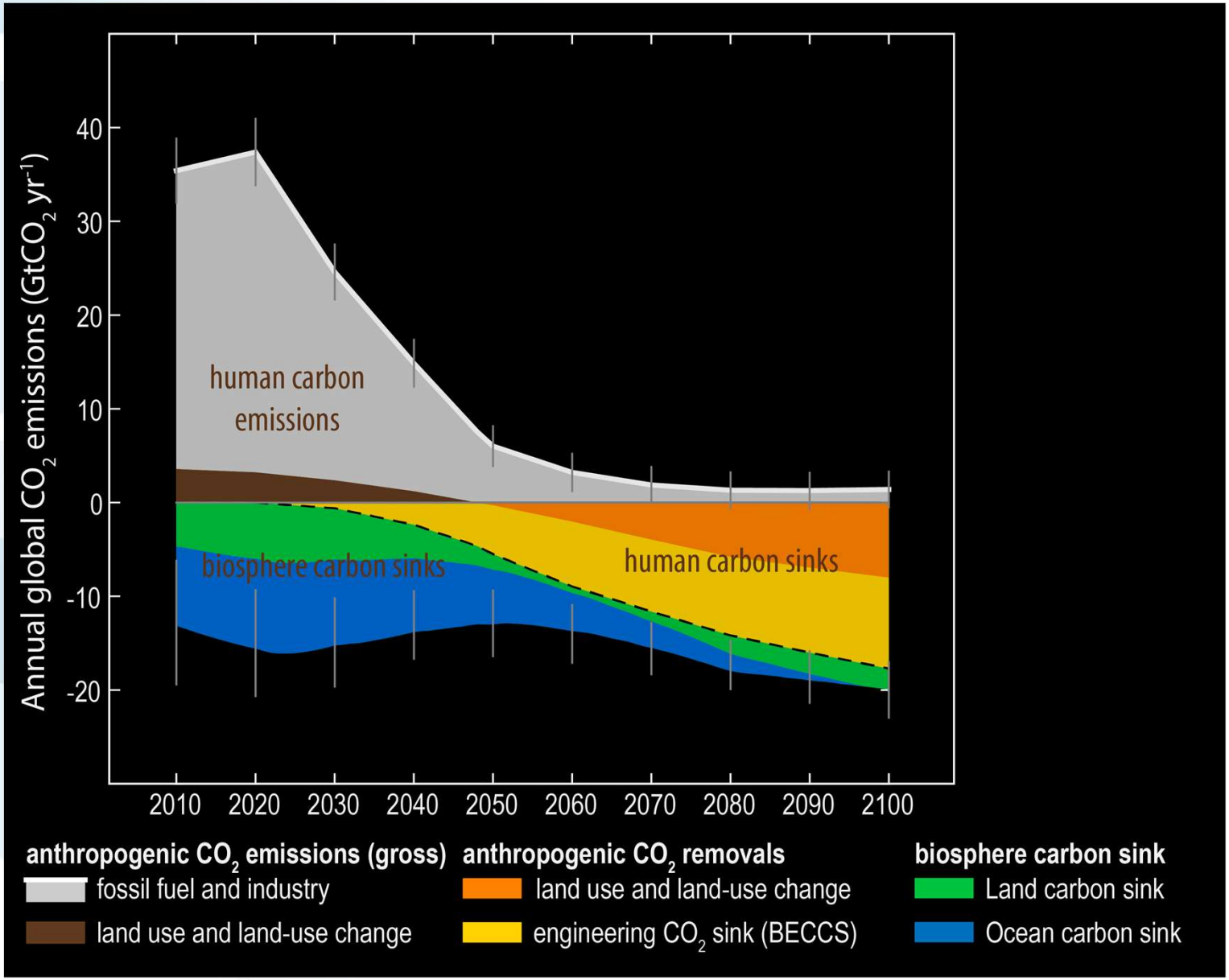
TWI2050 The World in 2050 Nakicenovic

2018 #16

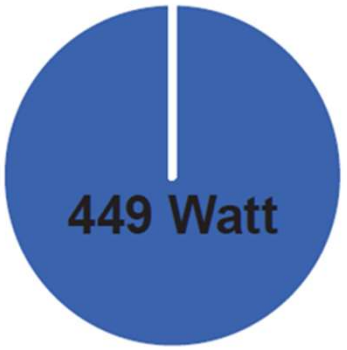
Education and Human Capacity



Moore's "Carbon Law"



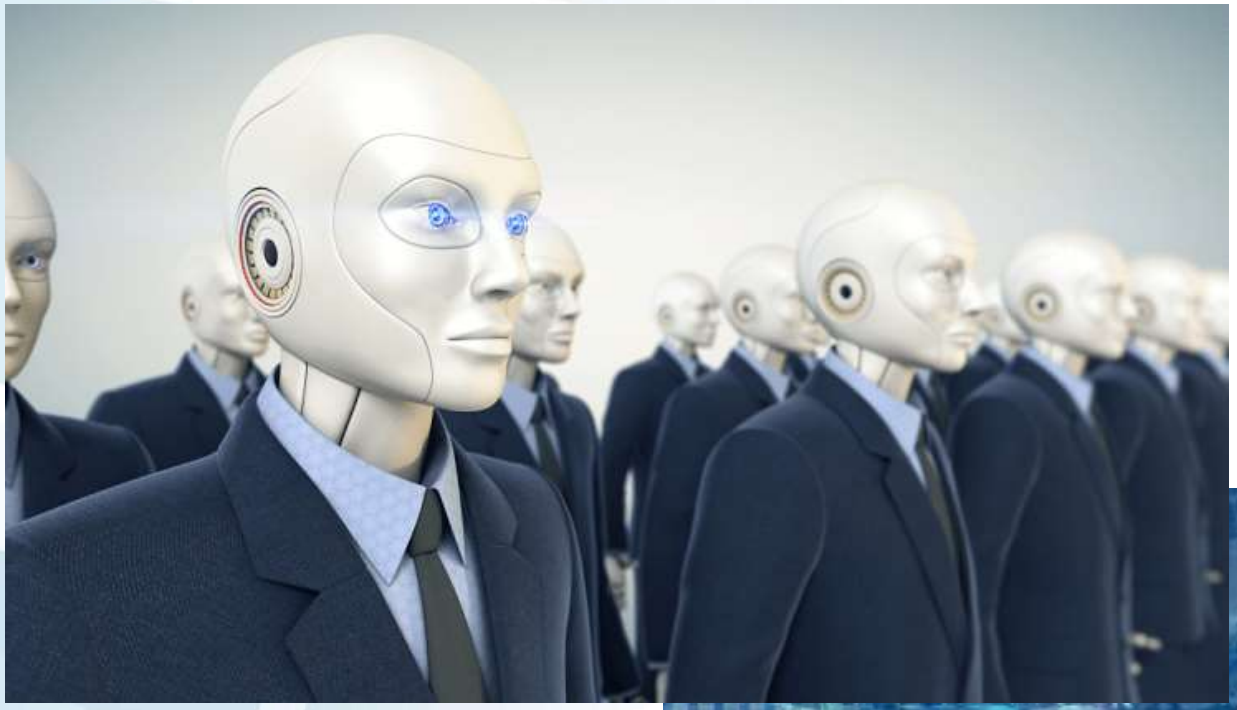
Impact of IC Technology Convergence



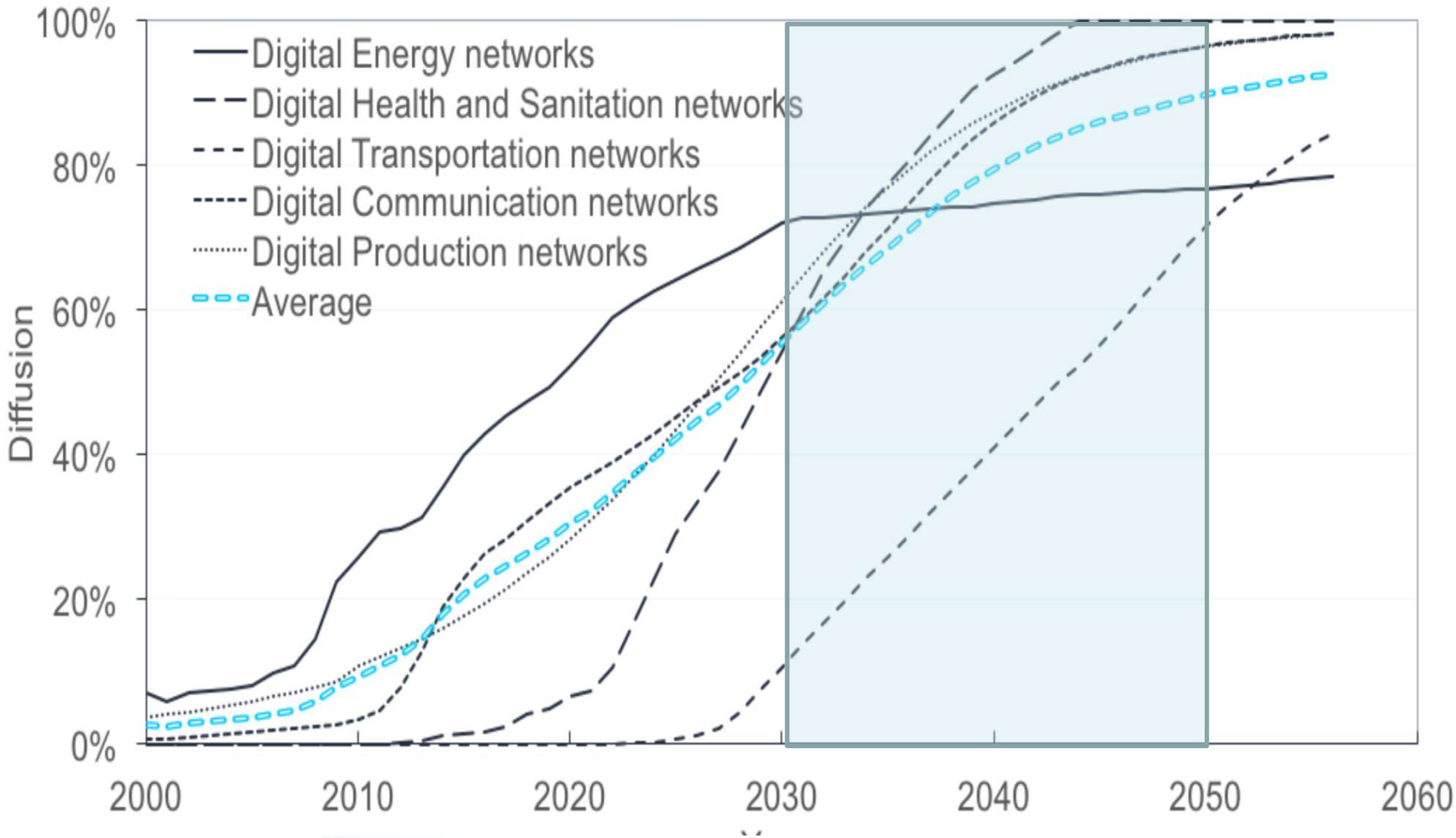
Power consumption

Stand-by

Digital Revolution



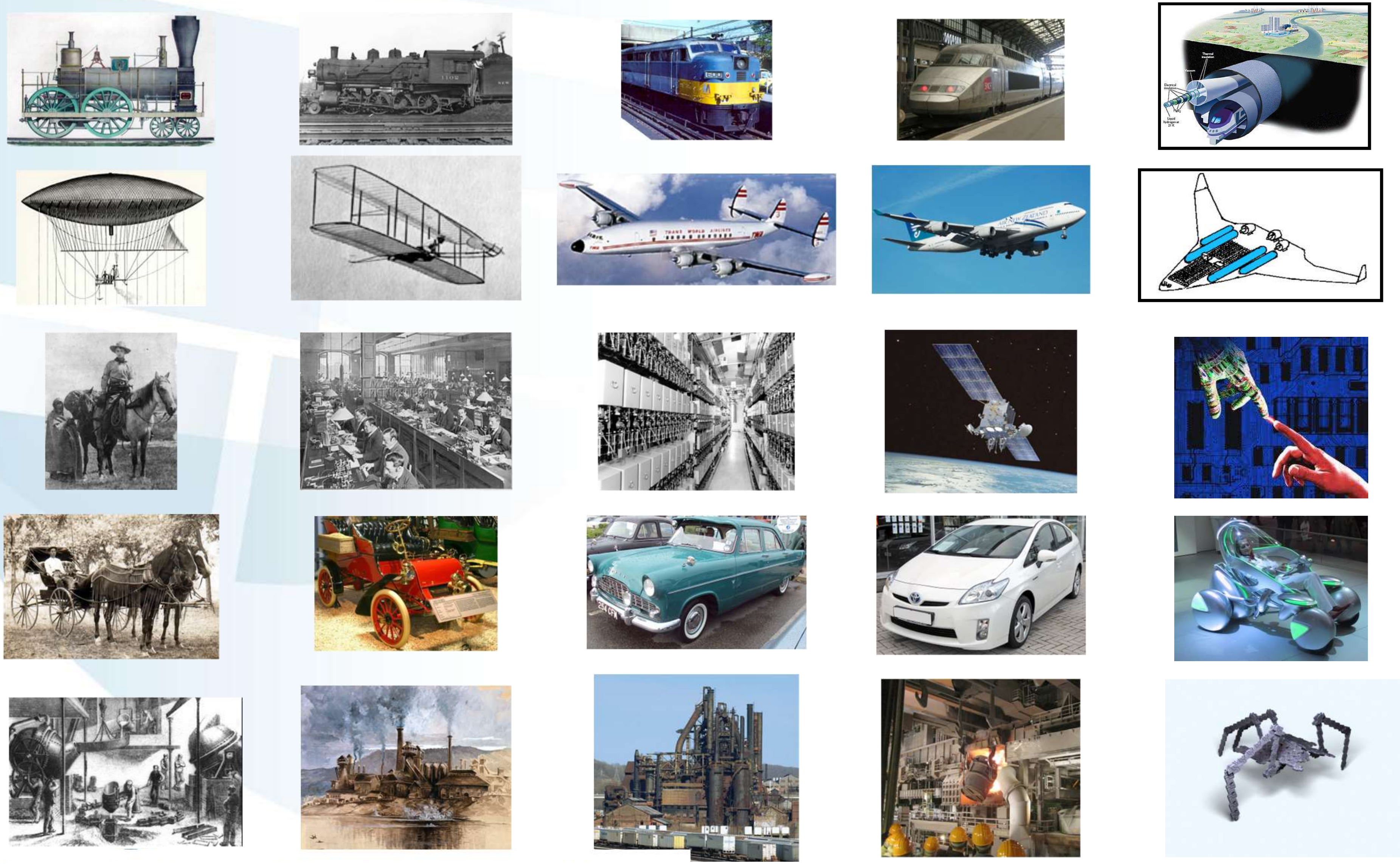
Technology Diffusion Compared
digital revolution



Source: Nokia Bell Labs, 2017

Transformational Change

1850 1900 1950 2000 2050



Source: After Granger Morgan, 2013

Disruptive Change

International Institute for Applied Systems Analysis
IIASA www.iiasa.ac.at

THANK YOU

science for global insight

naki@iiasa.ac.at