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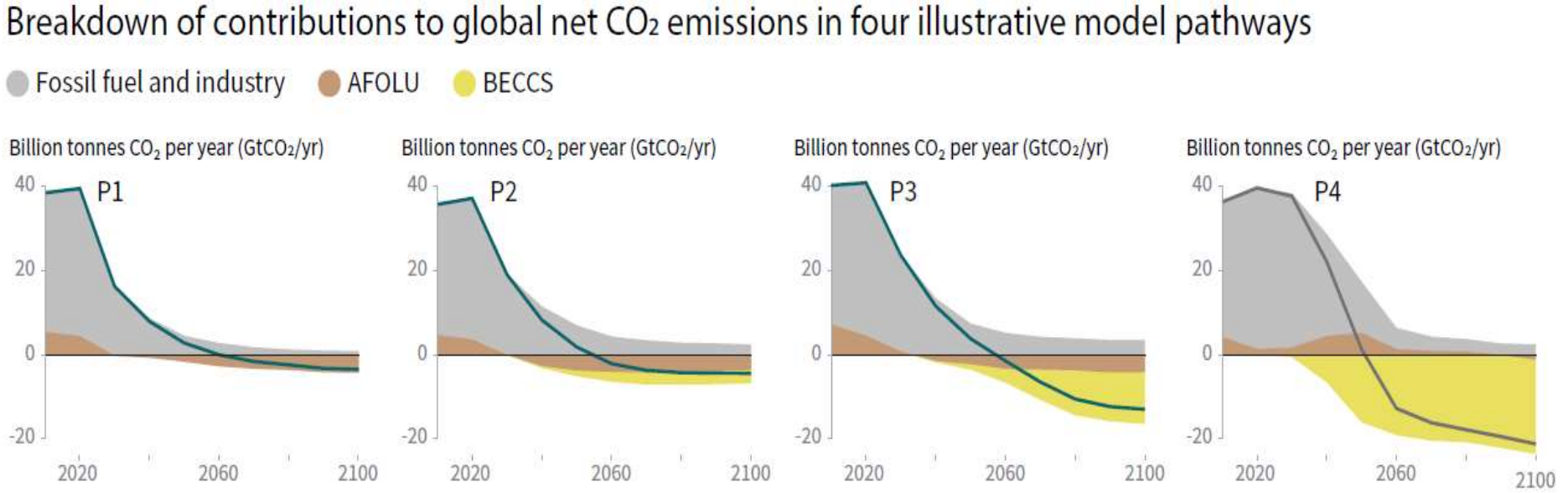
What characterises a sustainable and circular bioeconomy?

Zerokonferansen 7.11.2018

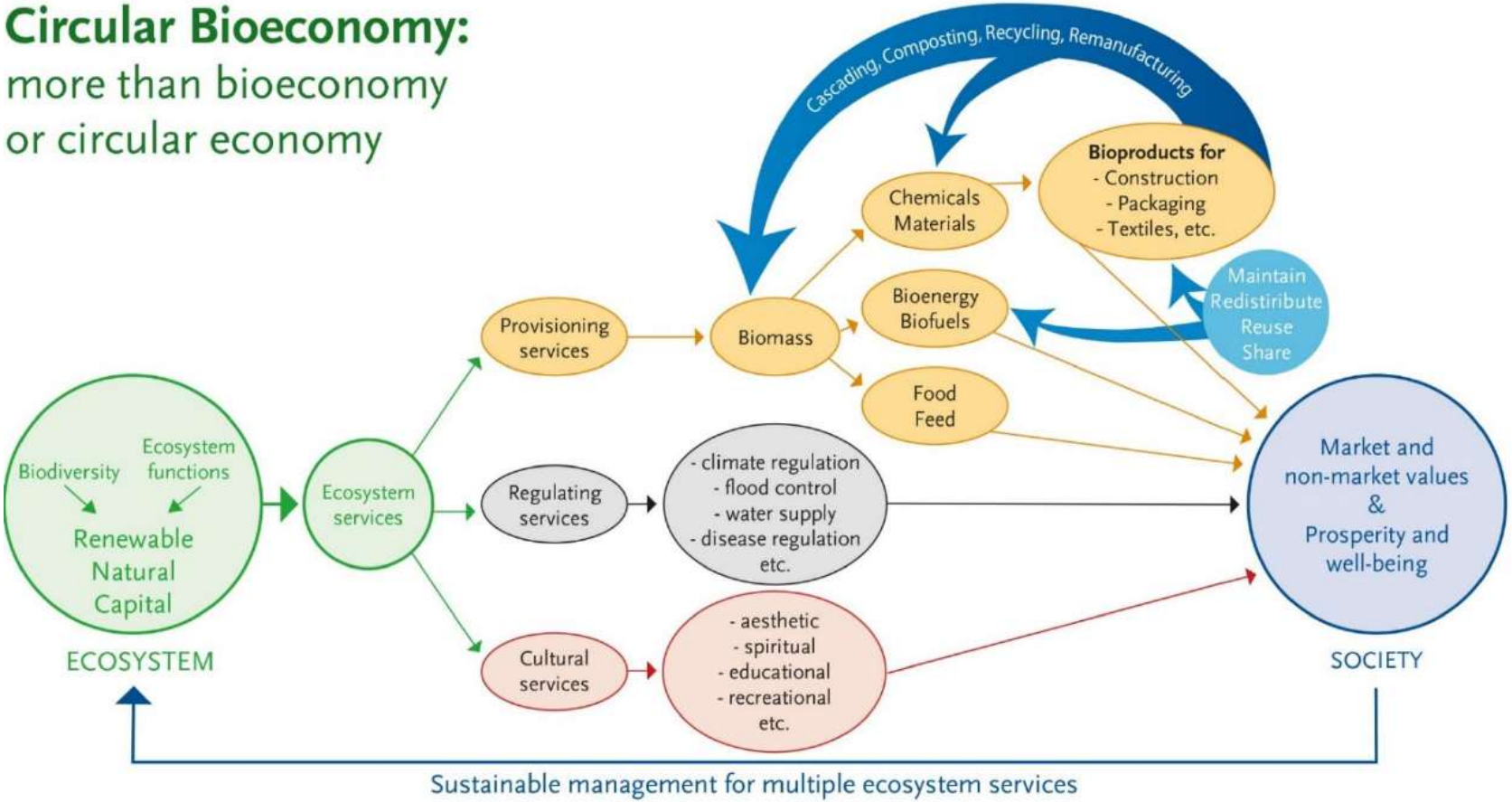
Special Adviser Arne Bardalen

Norwegian Institute of Bioeconomy Research - NIBIO

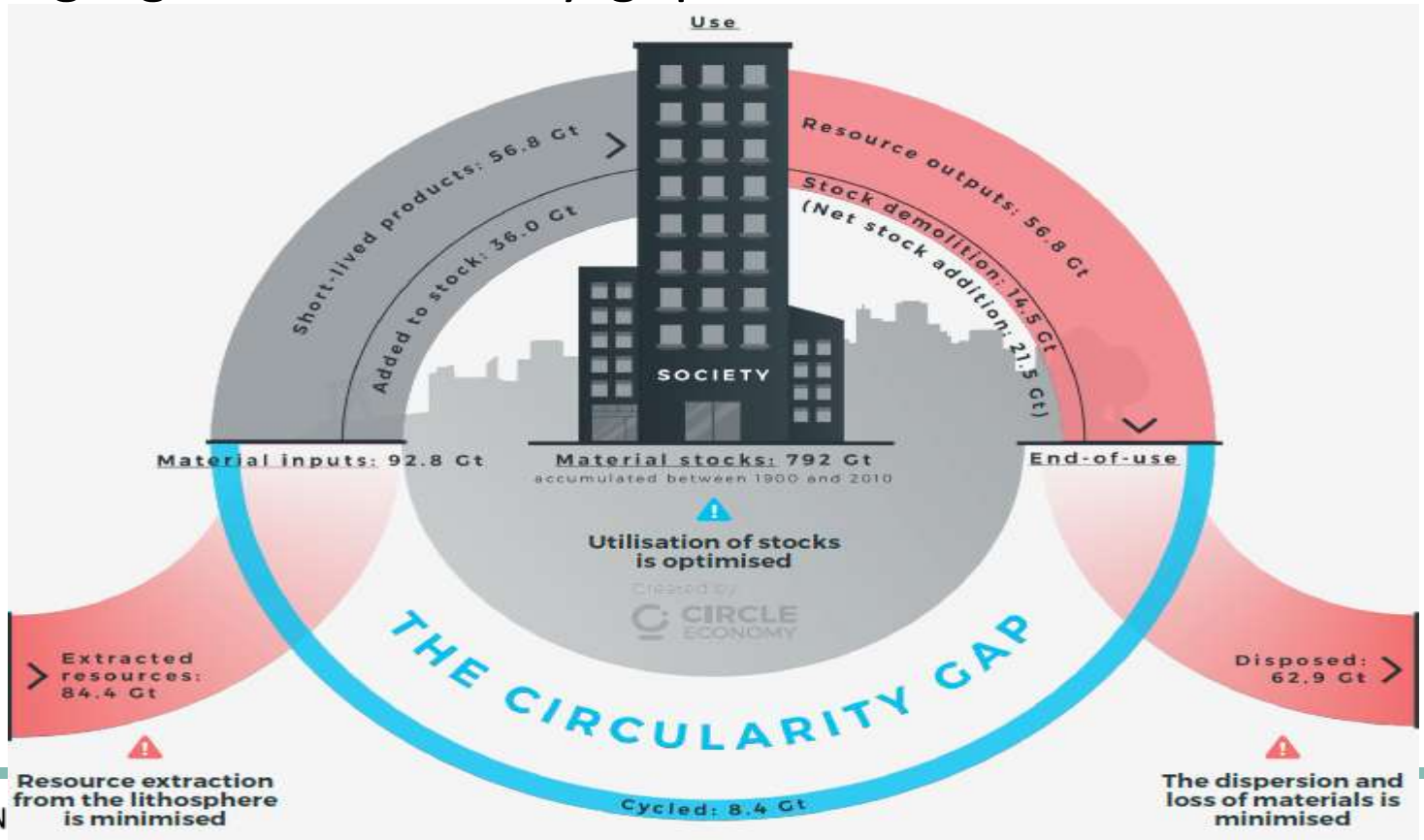
Pathways that limit global warming to 1,5:
Biomass and bioeconomy - key to substitution and CCSU



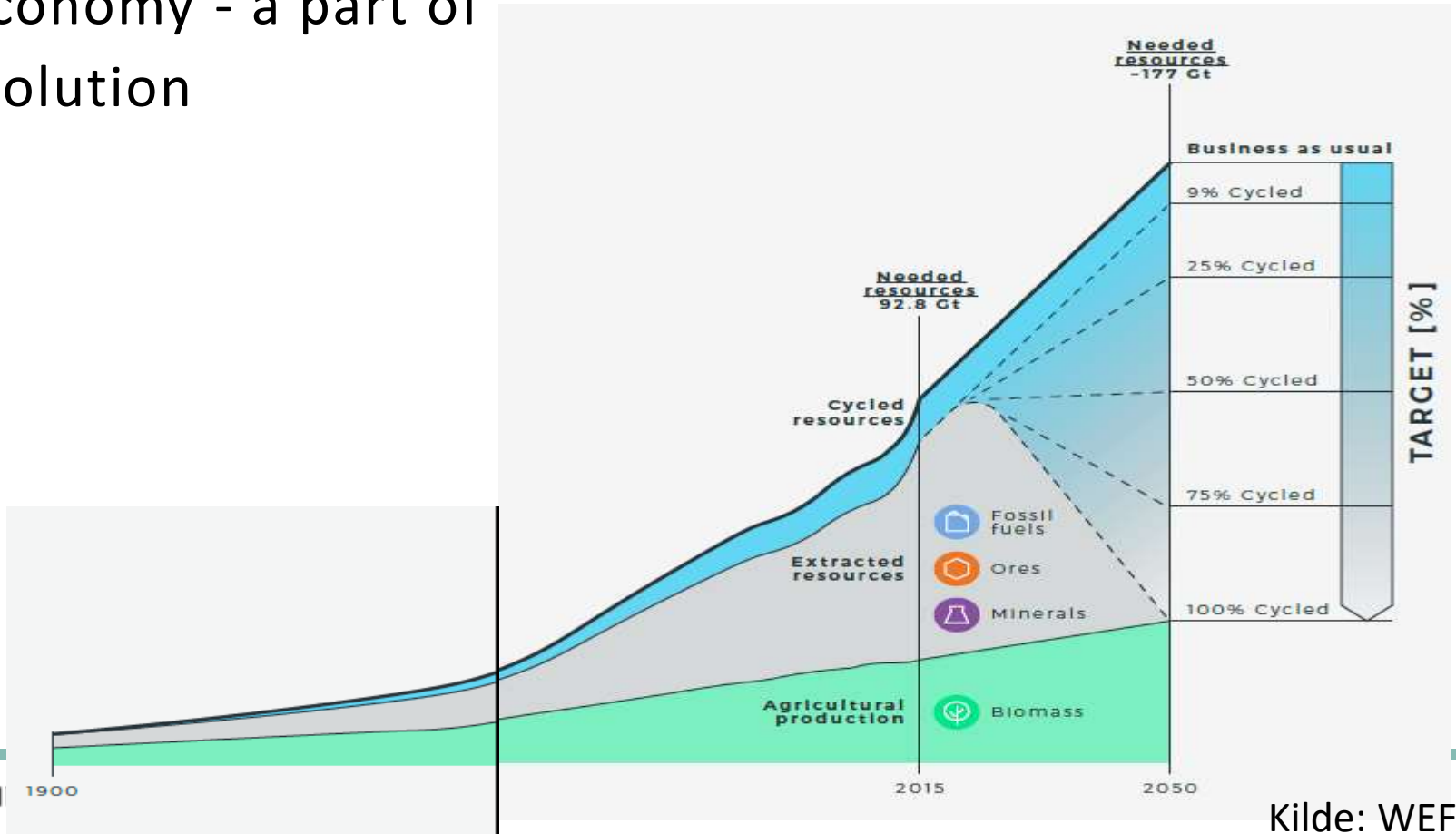
Circular Bioeconomy:
more than bioeconomy
or circular economy



Circular economy: A key to resource efficiency and bridging the circularity gap



Bridging the circularity gap – bioeconomy - a part of the solution



Kilde: WEF 2018

Biomass scarcity – threat to bioeconomy?

Table 4.3: Biomass supply and demand of the world 2011 and 2050 in different scenarios (Piotrowski et al. 2015, no final data), Billion t dry matter

Sector	Status 2011	SCENARIO A: BIO-MODESTY	SCENARIO B: BIO-BOOM	SCENARIO C: BIO-SCARCITY
Food	1.75	2.2	2.2	2.2
Feed	7.06	8.3	8.3	8.3
Bio-based chemicals and materials	1.24	2.4	5.7	1.0
Bioenergy	2.98	4.3	4.2	1.5
Biofuels	0.15	1.0	3.5	0
Total supply of biomass	12.18	18.2	23.9	13.0
Total demand for biomass	12.18	18.2	23.9	23.9

Kilde: 4th. SCAR Foresight Study, 2015

Biomass resource policy - premises

- Biomass is underexploited:
  - Too much biomass and waste are **not used optimally**
  - More feed, material and energy can be **extracted from current biomass streams**
- The biomass potential can be upgraded by:
  - Closing yield gaps
  - Increasing productive land, new or improved species
  - New and improved extraction and processing technologies

Bioeconomy development requires to tackle synergies and trade-offs

5 key principles for a sustainable bioeconomy

- Food first – ensure food security
- Sustaniable yields – harvest and regrowth
- Cascading approach – max value added
- Circularity- reduce/reuse/recycle
- Diversity – system, process, product, scale

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NORWEGIAN INSTITUTE OF BIOECONOMY RESEARCH

Thank you!

Arne Bardalen

+47 48067328

arb@nibio.no

www.nibio.no

Bioeconomy, environment and “do-no-harm” principle

More intensive utilization of bioresources increases the **potential for conflict with important ecosystem services, biodiversity, economic disparity and food security**

Central in developing the bioeconomy:

- prioritize and strengthen research on impacts on environmental and social interests
- review of legislation, public funding agencies and industry managed schemes to ensure long-term sustainability
- “do-no-harm” – a basic principle for bioeconomy

EU Bioeconmy - figures