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COP 21 RIPPLES

RESULTS AND IMPLICATIONS FOR PATHWAYS AND POLICIES FOR LOW EMISSIONS EUROPEAN SOCIETIES

A multidisciplinary research contribution to the understanding of the required transformations to meet the Paris Agreement mitigation goals

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SB50 Side event, Bonn, 18/06/2019

… Ambition that is Paris-compatible transformative ambition

SECTORAL TRANSFORMATION

WP2

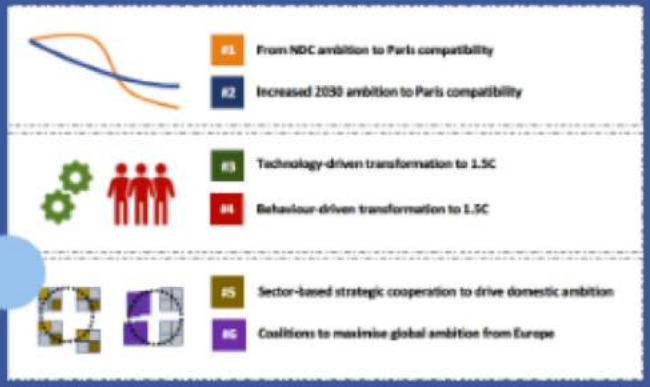
Assessment of the adequacy of NDCs and available pathways to 2°C/1.5°

T2.1 Scenarios Database IDDRI

89 scenarios:
51 by global teams and models,
38 sourced from in-country teams,
15 **new** in-country scenarios.

Deviation:
confidential status

T2.2 Transition narratives IDDRI



WP3

WP4

T2.3 Implications of 1.5°C versus 2°C

CLIMATE ANALYTICS

Deviation: IEA_ETP for IAM on 1.5C

- Transformation paths of the transport and power sector for beyond 2C goals at country-level within the EU and EU28
- Investment requirements until 2030 and 2050

T2.4 Decarbonisation wedges CNRS

Factoring in the impact of contrasted sectoral development assumptions and potential structural change of the economy:

- Strong differences between Western and Eastern European countries are found
- The techno-economic feasibility and political realism of the transformation required in the energy system after 2030 in NDC scenarios is, at very least, questionable.

T2.5 Conclusions IDDRI

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Understanding transformative ambition is our current challenge.
A sectoral country-driven approach to decarbonisation is more likely to deliver transformative ambition

- Looking only at the global emission trajectories is not sufficient to understand the challenges and opportunities associated with different levels of ambition. Policymakers should also characterize the content and nature of the transformations underlying ambition.
- Increasing ambition in the short-term would not be homogeneous across sectors, and requires a sector-by-sector assessment of potentials and transformational needs.
- The effective way to increase national ambition is for this effort to be articulated with the countries' development objectives. Sector transformative pathways can open the door for a discussion framed in terms of economic and social progress.
- A common understanding of the strategic interests associated with a given sector's transformation is a pre-requisite for the international governance landscape to support the development and deployment of sectoral policies;

IMPLICATIONS FOR SOCIO-ECONOMIC OBJECTIVES

WP3

Realising Green Growth: Economic and Security dimensions of NDCs and deeper mitigation pathways

Task 3.1: Energy security
Task 3.2: Trade, energy intensive industries, and competitiveness
Task 3.3: Investment, public and private financial flows

Focus in RP1: Modeling Narratives #1 and #2

In addition,

- T3.1: Literature review; Setting up relevant indicators; advancement of country case-studies (Poland & Bulgaria)
- T3.2: Literature review; Setting up relevant indicators;
- T3.3: Soft-link of diverse models (TIAM-ENGAGE-MEWA); WACC data set

T4.3

Task 3.4 Inequalities

UNIVERSITY OF CAMBRIDGE

- Literature review
- Sourcing model input data

Deviation: RIPPLES modeling framework instead of E3ME

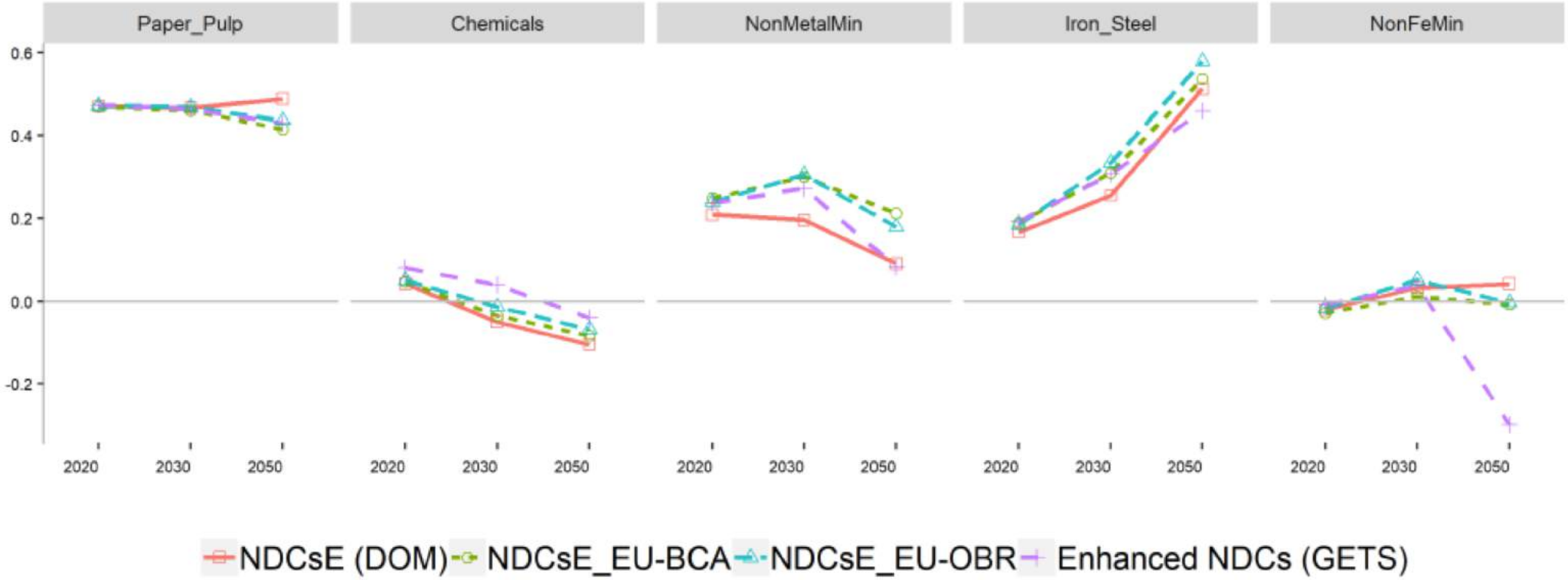
Task 3.5 Technology innovation and competitiveness

Export and innovative strength of countries in 14 low-carbon technologies, technological progress and learning, country experiences in stimulating sector and technology-specific development

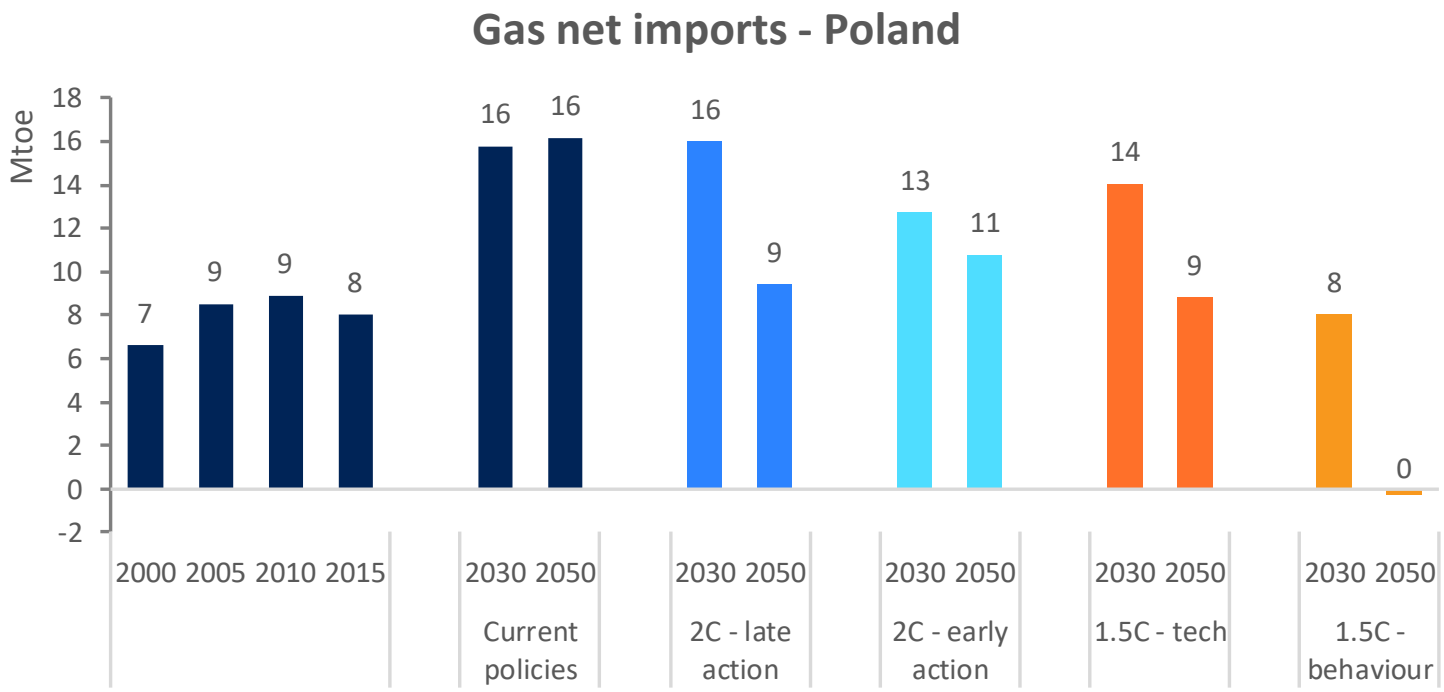
- Almost all of the analysed countries (incl EU28 and G20) have a revealed comparative advantage in at least one low-carbon technology
- Likely that wind, solar and storage technologies will become much cheaper in the near future, and that this progress can be accelerated by increasing near-term investments.
- Fossil fuel and nuclear based technologies have only a low chance of significant future progress.
- Brazil, China, Italy and South African success and failure policy stories on specific technology developments

Other EU projects: i.e.Green-Win

Effects on Relative Competitiveness – EU 28



The national cases: climate policy to reduce gas import bill and increase diversification in Poland



Source: POLES model. COP21 RIPPLES Energy Security report (to be launched soon)

INTERNATIONAL CLIMATE GOVERNANCE

WP4

Assessment of the adequacy of COP21 outcomes for effective international climate governance and the EU's role

Task 4.1: Governance functions

the need for the performance of most governance functions varies significantly in each sectoral system

Deviation using CA staff resources

Task 4.2: Evaluation of the climate regime complex

structure and composition

interrelations

gaps and overlaps in fulfilling the desirable functions

correction measures in 7 sectoral systems

+ Implications for the UNFCCC
+ Implications for the EU

Task 4.3 In-depth governance analysis

1. Transformative climate finance
2. Innovation Governance
3. Decarbonisation Clubs

Task 4.4 Political economy barriers

"...But behind policy there is always politics, and getting the politics right appears to be a prerequisite to getting the policies right."

(Meadowcroft, 2011)

Matching physical transformation with technology, finance and governance to assess adequacy to implement the Paris Agreement mitigation goals

Sectoral transformation

Physical, Finance and Technology needs

- Revision of existing global and in-country scenarios
- Downscaling of global scenarios to national-level
- Development of in-house new global & national scenarios

Enabling conditions

Technology, Governance & Finance

- Forecasting experience curves of technologies in the energy sector
- Identifying national technology development competitive advantages
- Studying political economy barriers & past experiences on tech uptake
- Identifying international governance gaps and opportunities per sector
- Exploring decarbonization clubs potential
- Unpacking options to operationalize Article 2.1 on transformative finance

Socio-economic consequences

- Energy security
- Industrial competitiveness and trade
- Financial and macro-economic implications
- Inequalities

Available on www.cop21ripples.eu

POLICY BRIEF:
A SECTORAL PERSPECTIVE TO EMBARK ON TRANSFORMATIVE PATHWAYS

Delaying action implies a triple burden: doing more later, being less prepared for it and paying more, besides being a fundamental matter of feasibility to meet the Paris Agreement mitigation goals

- ❑ Increasing pre-2030 ambition leads to a smoother, more realistic transition; it avoids relying on more intense rates of decarbonisation later, or asking comparatively more of a specific sector, which may increase acceptability problems.
- ❑ Higher pre-2030 ambition offers an opportunity to reduce the overall cost of the transition through 'learning by doing' and avoids locked-in investments.
- ❑ A sectoral country-driven approach can be supported by advancing international governance mechanisms in sectoral terms, and periodic review mechanisms structured by sectoral themes.

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POLICY BRIEF:

LEARNING FOR DECARBONISATION: START EARLY, CONCENTRATE ON PROMISING TECHNOLOGIES, EXPLOIT REGIONAL STRENGTH AND WORK WITH YOUR NATIONAL SYSTEM

Learning by doing is part of transformative ambition: early investments are central

- Early investments to foster learning reduces decarbonisation costs in the long term
- Early investments into decarbonisation technologies also offer economic opportunities for individual countries to develop new low-carbon technologies and sectors.
- Learning is not only a result of R&D, but also of 'learning by doing' effects that can follow from increased deployment.
- Learning rate estimations show clearly an advantage of available low-carbon technologies over mature "brown" technologies when it comes to electric power generation.
- Almost every country has some potential to specialise in a particular low-carbon technology and could benefit from doing so. Specialisation is necessary, especially for small countries,
- Existing strong sector can fail to develop new technologies (electric vehicles in Italy), but also massive industrial expansions do not automatically yield the latest technology (PV in China). In the end, right policy choices and implementations are crucial to foster learning as well as to the creation of a local industry.

UPCOMING POLICY BRIEFS:

To be released before European summer:

- **Is it smart to stick to current 2030 policies and approaches?**
- **Country heterogeneity in the EU low-carbon transition**

Tentative Drafts available for discussion at the Second Policy Dialogue (October-2019):

- Industrial transformation: the Steel sector case
- Accelerating technological development and uptake
- Decarbonisation clubs. Made in EU
- Beyond 100bn
- Implications for inequalities and just transition
- Getting to 1.5C – from A to Z
- EU renewed leadership

COP21 RIPPLES expected impact

- ❑ Increase in-country modeling capabilities
- ❑ Promote sector-based approaches
- ❑ Facilitate multi-disciplinary conversations
- ❑ Precipitate the study of political economy barriers in emerging economies
- ❑ Enable practical alignment between long-term strategies and NDCs
- ❑ Improve understanding of critical short-term steps

Thank you for your attention,

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Deliverables to date available on www.cop21ripples.eu

Next Policy Dialogue: October (Brussels)