INDONESIA
UPDATE ON INTENDED NATIONALLY DETERMINED CONTRIBUTION (INDC)

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Outline

- Policy and results of Indonesia climate mitigation actions 2010-2014
- INDC position in the context of Indonesia development
- Preparing and the steps forward on the review of mitigation policy and INDC development

Policy and results of Indonesia climate mitigation actions 2010-2014

Indonesia Low Emission Development Policy – Previous "INDC" Commitment:

Economic Development Target

+ 7% Economic Growth

LED

- 26/41% Reduction of GHG
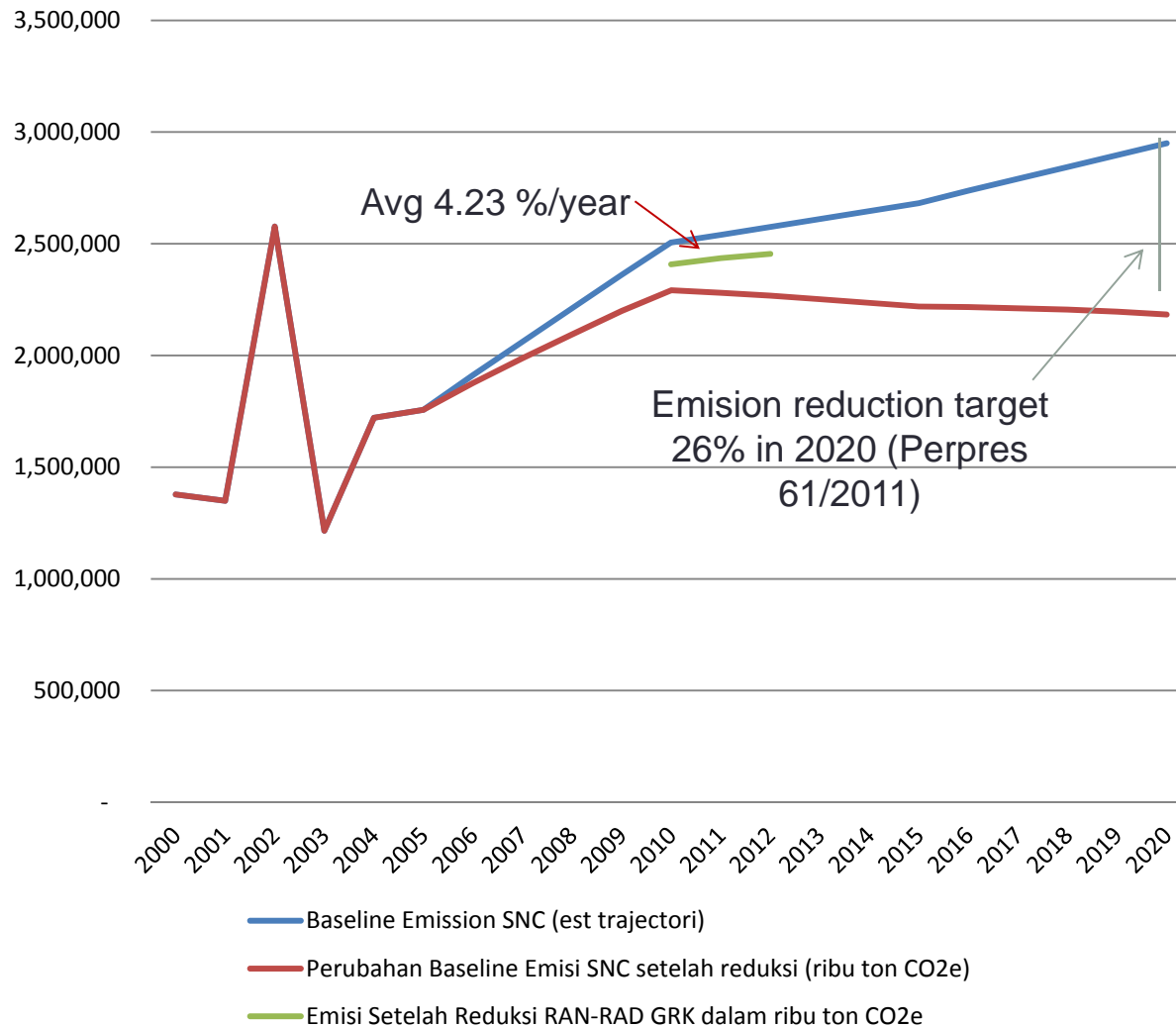
Climate Change Objective
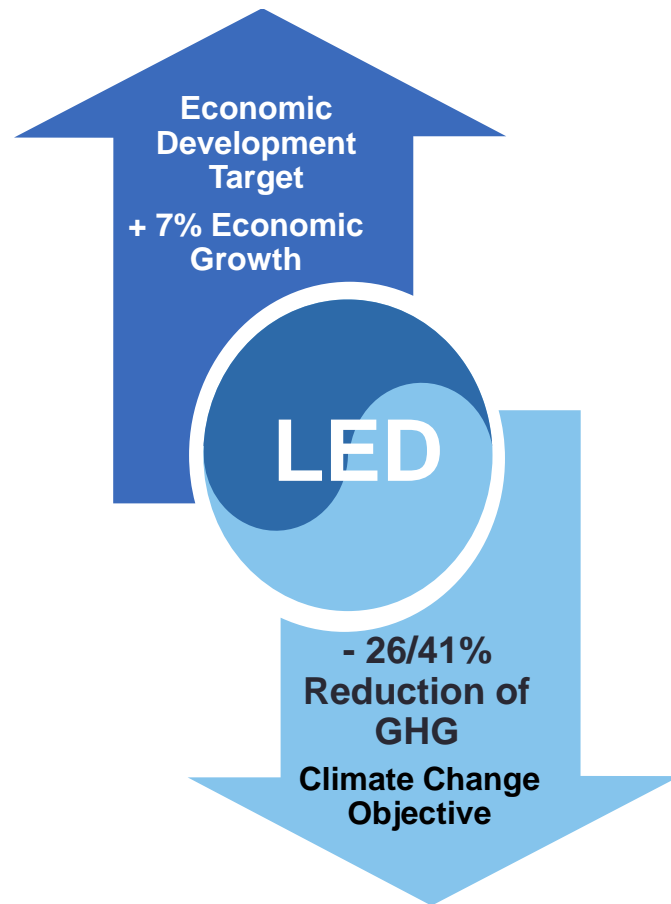
Presidential Regulation No. 61/2011 on GHG Emission Reduction Action Plan

"We are devising ...a policy ... that will reduce our emissions by **26 percent by 2020** from BAU (Business As Usual). With international support... we can reduce emissions by as much as **41 percent**"

President Susilo Bambang Yudhoyono
at the G20 Summit in Pittsburgh, 2009

Sector	Emission Reduction Target (Gton CO2e) by 2020	
	26%	41%
Forest and Peat Land	0.672	1.039
Agriculture	0.008	0.011
Energy and Transportation	0.036	0.056
Industry	0.001	0.005
Waste	0.048	0.078
Total	0.767	1.189

Total Emision Reduction 2010-2012 vs Baseline SNC

Avg 4.23 %/year

Emision reduction target 26% in 2020 (Perpres 61/2011)

Baseline Emission SNC (est trajectori)

Perubahan Baseline Emisi SNC setelah reduksi (ribu ton CO2e)

Emisi Setelah Reduksi RAN-RAD GRK dalam ribu ton CO2e

- Emission reduction average 2010-2012 is about 107.6 million ton CO2e per year or about 4.23% per year reduction compared to baseline SNC.

- Notes: Communities and private actions are not yet counted.

- Indonesia still needs intensive efforts to achieve the goal in 2020.

REVIEW OF MITIGATION POLICIES - RAN-GRK
## (Presidential Regulation No. 61/2011 Article 9)

Objectives:

1. Adapt to new development plan 2015-2019 and cabinet policy.

2. Consider achievement within the last five years (2010-2014).

3. Improve projection pre-2020 and post 2020 with a better methodology (adjusted to the dynamics UNFCCC negotiation).

4. Review the current emission baseline submitted in the SNC. (see the graph).

5. There is a need to submit INDC to the UNFCCC.

Elements to be reviewed:

1. Data, methodology and tools to develop emission baseline;

2. Emission reduction target by sectors (forest and land, energy and waste);

3. Mitigation policy and action plan;

4. Impacts to the economy

Comparison between Baseline Emission SNC vs Emission Inventory 2000-2012 (draft Biennial Update Report-BUR) – thousand ton CO_2e
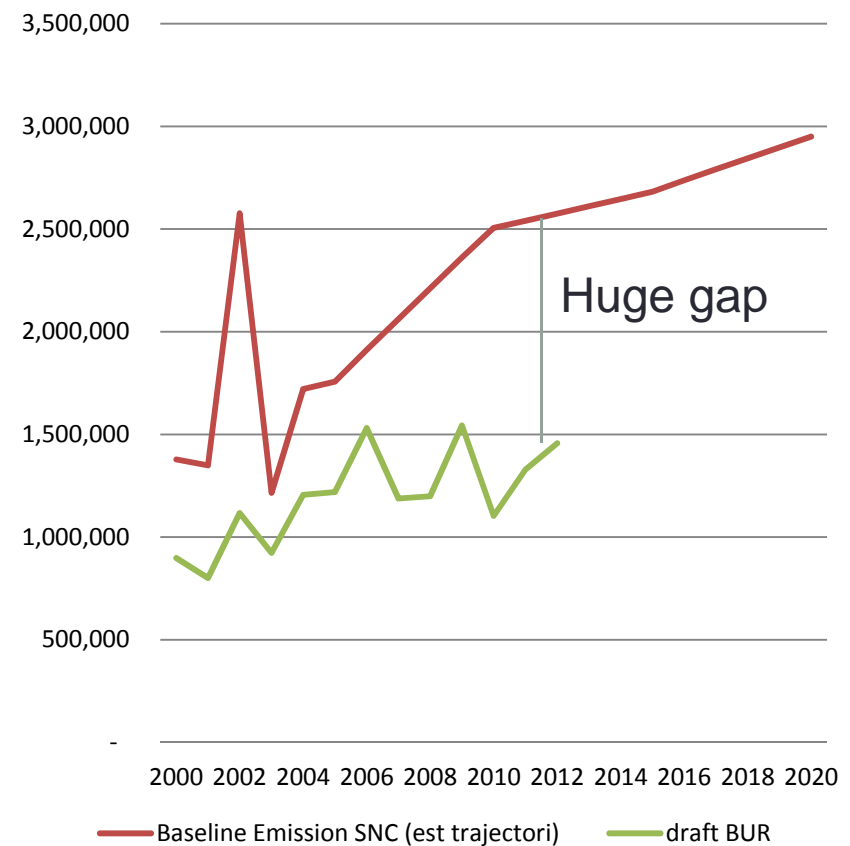
INDC position in the context of Indonesia Mitigation Policy (RAN-GRK) and Development Plan (RPJMN 2015-2019)
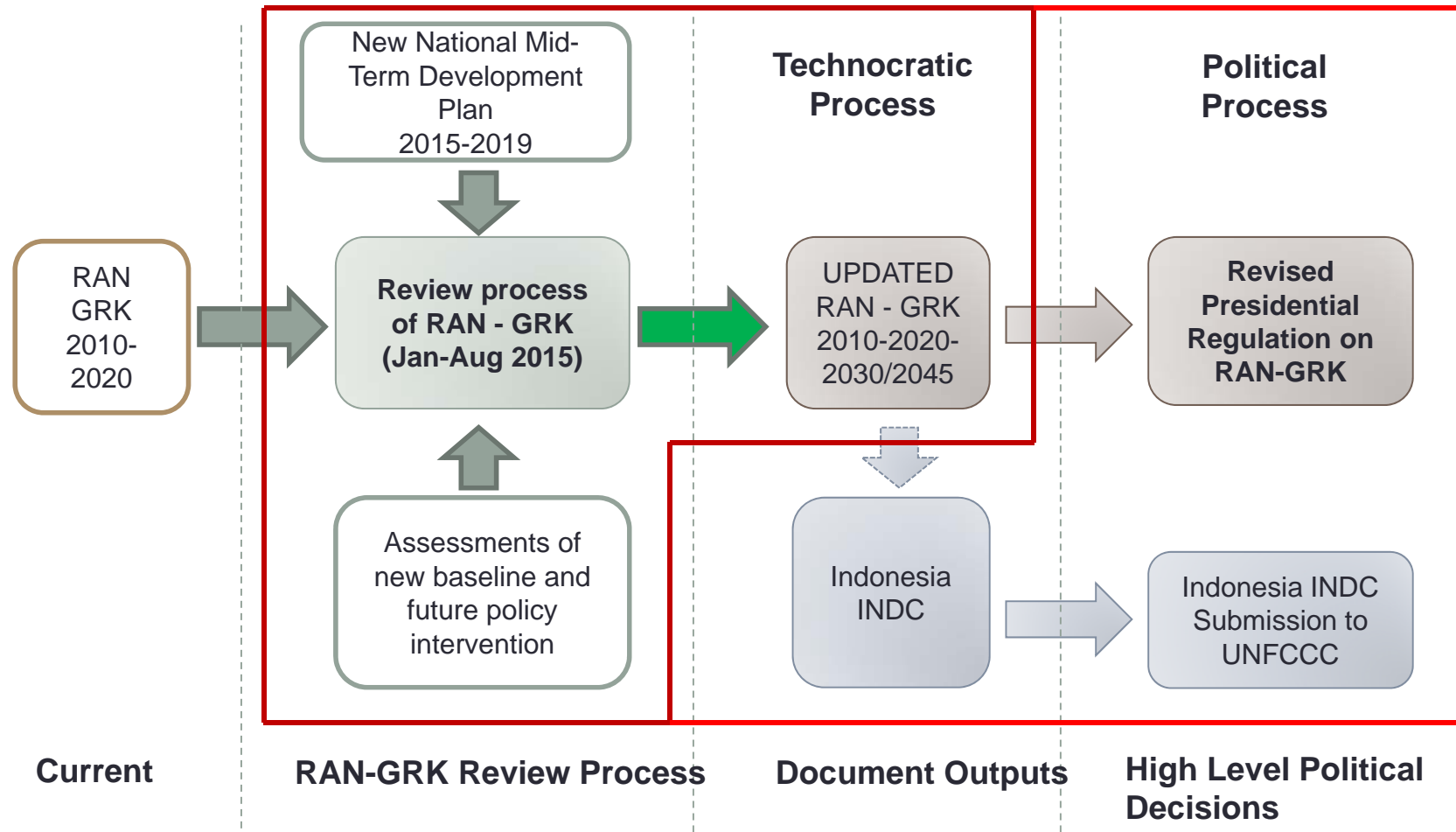
Principles on Mitigation Action

The entry points for Indonesia in setting its Climate Policy:

Article 3.4 of UNFCCC:

'policies and measures to protect the climate system against human-induced … should be integrated with national development program…'

Linkages between RAN-GRK and INDC

Current — **RAN-GRK Review Process** — **Document Outputs** — **High Level Political Decisions**

New National Mid-Term Development Plan 2015-2019

RAN GRK 2010-2020

Review process of RAN - GRK (Jan-Aug 2015)

Assessments of new baseline and future policy intervention

Technocratic Process

UPDATED RAN - GRK 2010-2020-2030/2045

Indonesia INDC

Political Process

Revised Presidential Regulation on RAN-GRK

Indonesia INDC Submission to UNFCCC

Indonesia INDC is a by-product of Indonesia Mitigation Policy (RAN-GRK) Review Process.

Indonesia position to the INDC

- ✓ **Voluntary contribution (CBDR Principle) and Based on state capability (Respective capability).**

- ✓ **Based on rigorous scientific-policy assessments and using latest available data and information (without creating further additional burden).**

- ✓ **Should be further institutionalized and mainstreamed into national development plan.**

- ✓ **Should encourage policy integration process particularly non-climate policy and benefits with climate change policy: Well-designed policies can make economic growth and other national priorities such as sustainable development, poverty reduction, mutually reinforcing with climate objectives .**

- ✓ **Detail on mitigation aspects, but adaptation efforts will be included as additional information.**

Preparing and the steps forward on the review of mitigation policy and INDC development

Indonesia approach to RAN-GRK Review and INDC
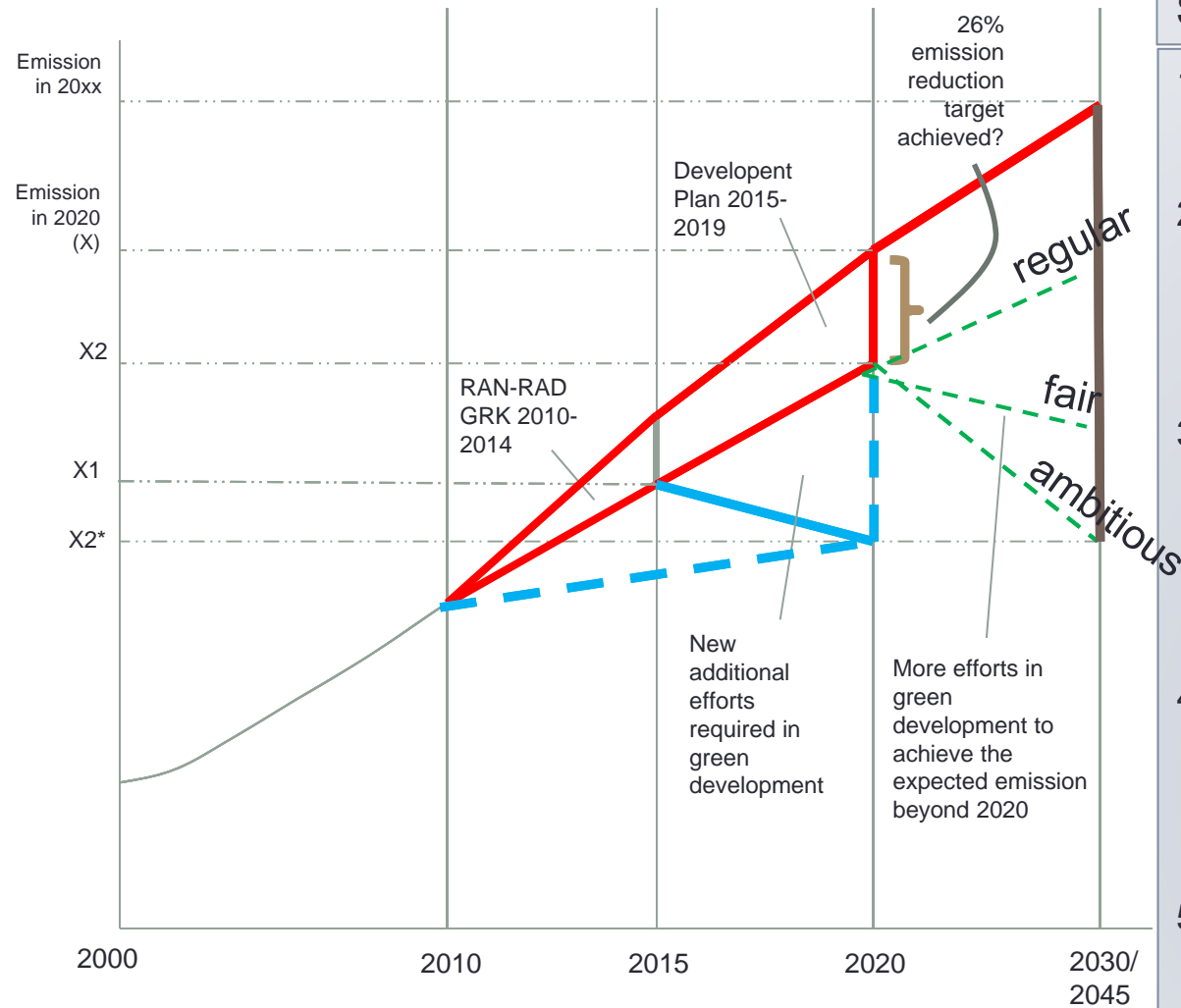
STEPS TO CONDUCT INDC:

1. Develop Indonesia GHG Emission baseline – trajectory from 2010-2045.
2. Evaluate result of RAN-RAD GRK 2010-2014, and determine the level of GHG emission reduced compared to the baseline.
3. Review proposed policy intervention proposed in the RPJMN 2015-2019, and determine the amount GHG emission reduced compared to the baseline in 2020.
4. Review the 26% target in 2020. Decision makers will refine the existing target for INDC or put more policy intervention to achieve the 26% target.
5. Define the new target for INDC in 2030/ 2045 with comprehensive policy intervention across sectoral line agencies

Output Target of RAN-GRK Review

1) <u>Determine aggregate national emission baseline (BAU), which is the integration of all RAN-GRK sectors </u>(2010-2030/2045);

2) <u>Conducting a review of impacts resulted from integrated multi-sector policy in reducing GHG emission from 2010-2020 based on RPJMN policy</u>;

3) Conducting a review of integrated multi-sector policy scenario in reducing emission <u>after 2020 (until 2030/2045</u>) ➜ for INDC.

Conceptualisation of RAN-GRK Review Process

Review RAN-GRK objectives:

- Find suitable policy interventions to maintain green economic growth while reducing GHG emissions → Low Emission Development Strategy (LEDS)/ Green Growth
- Measuring the medium and long term impact of climate change policy interventions on each sector and the

Methodology:

System Dynamics methodology. Implemented at the national level (aggregated model).
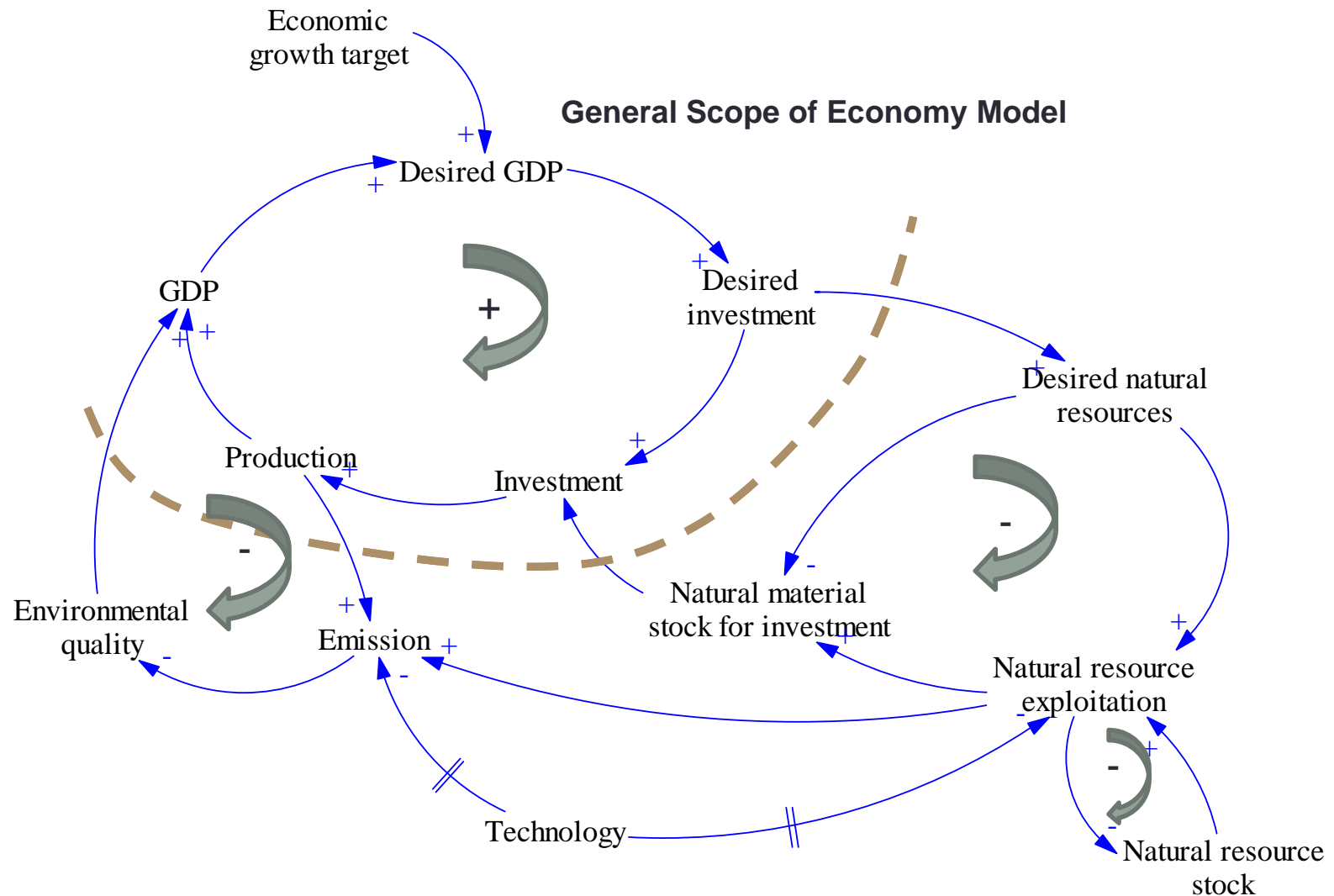
Sectors Scopes:

- Macro-Economy (GDP, Investment, etc.)
- Land Based:
  - Forestry and Peat
  - Agriculture
  - Livestock
- Energy:
  - Energy
  - IPPU
  - Land Transportation
- Waste:
  - Domestic

GHG Scope:

All GHGs, not including Montreal
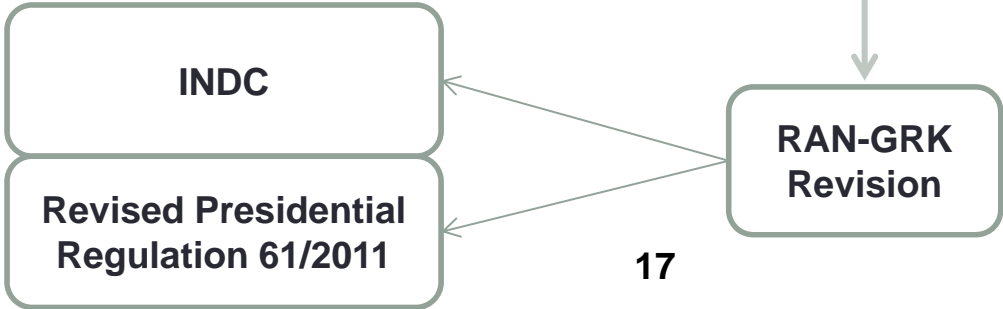
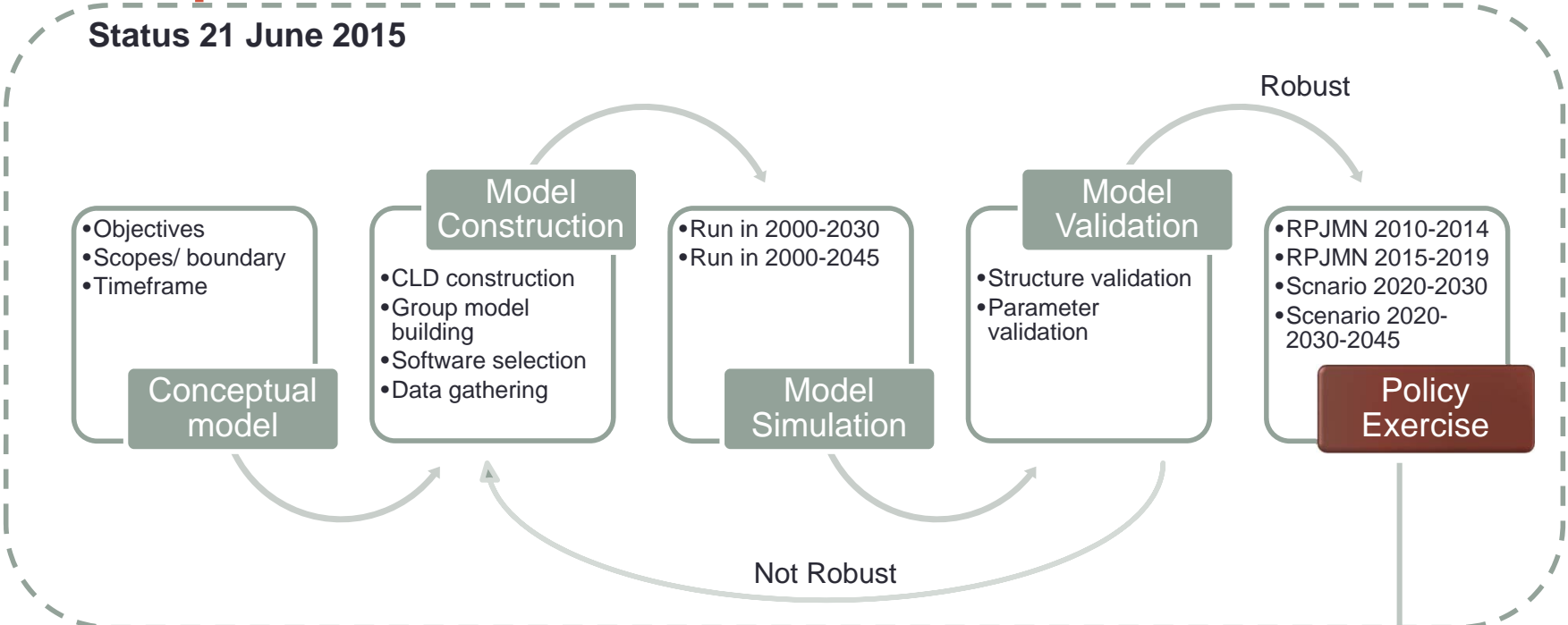# Scope/Boundary of RAN-GRK Review Model

Timeframe for RAN-GRK Review Modeling Simulation (Applied to all RAN GRK Sectors)

- **<u>Reference Period: 2000-2010</u>**
  - Indonesia started to reform its development from 2000 (after devastating economic crisis in 1998-1999)
  - Indonesia initiated its climate mitigation policy in 2010

- **<u>Simulation run: 2000-2030/2045</u>**
  - Selection of 2030 refer to the SDG
  - Selection of 2045 as the final year of simulation refer to the end of second long term development program

- **<u>Policy scenario run: 2010-2014,2015-2019,2020-2030/45</u>**
  - 2010-2014: First Mid-Term Development Plan
  - 2015-2019: Second Mid-Term Development Plan
  - 2020-2030/45: Policy Scenario beyond 2020 for LEDS (Regular, Fair and Ambitious)
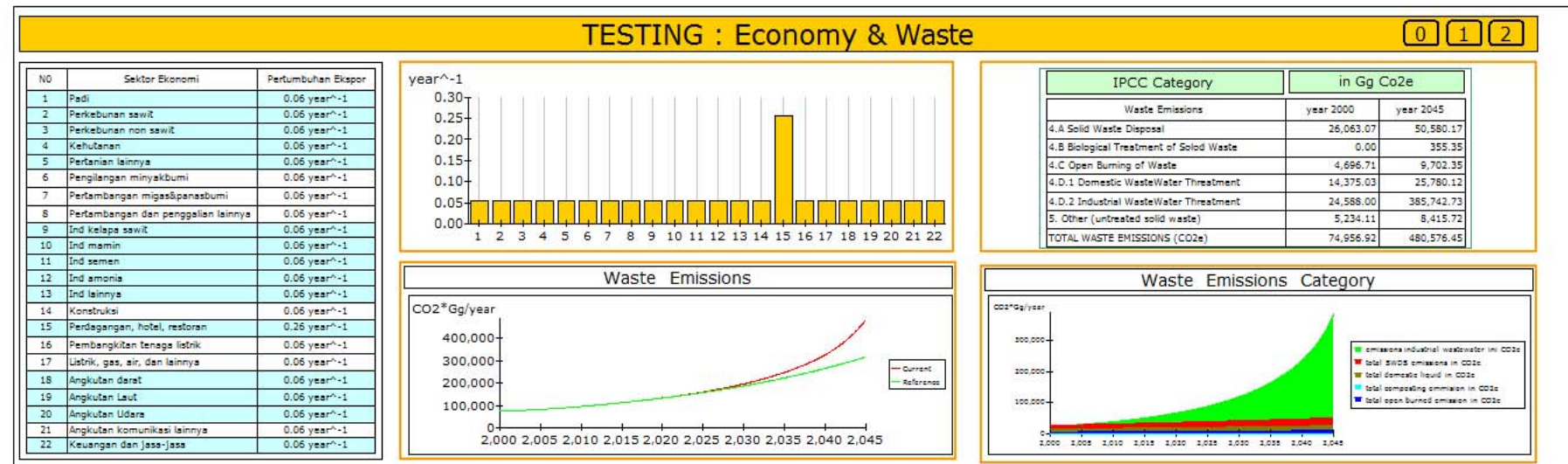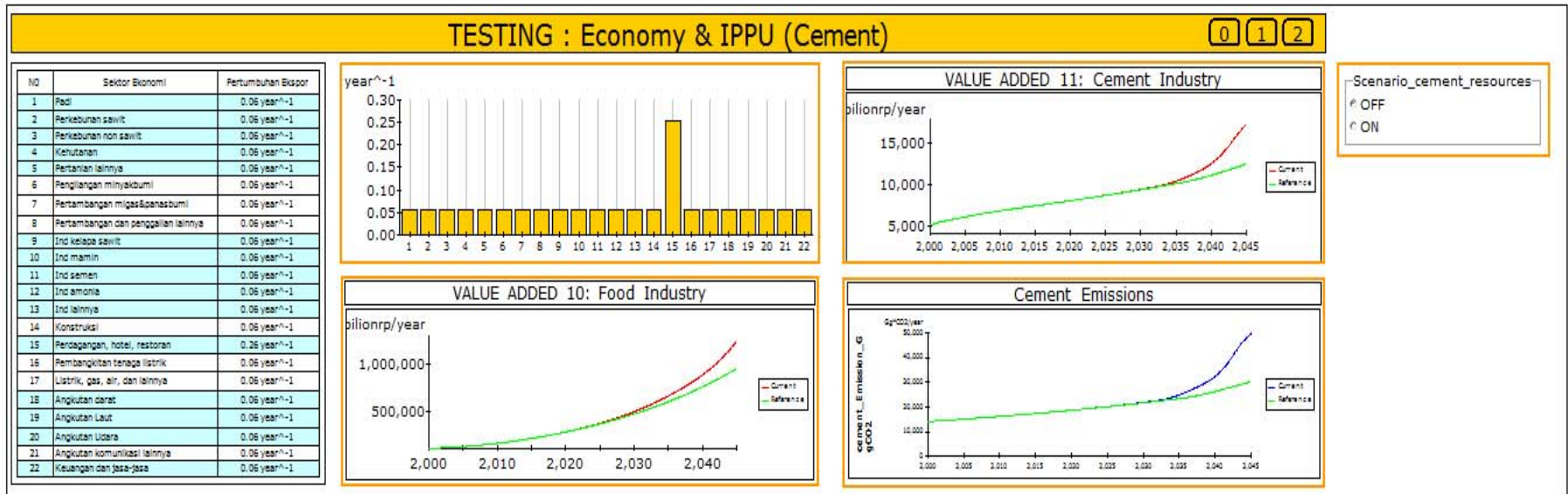
Preparation Status

Status 21 June 2015

Robust

- Objectives
- Scopes/ boundary
- Timeframe

Conceptual model

Model Construction
- CLD construction
- Group model building
- Software selection
- Data gathering

- Run in 2000-2030
- Run in 2000-2045

Model Simulation

Model Validation
- Structure validation
- Parameter validation

- RPJMN 2010-2014
- RPJMN 2015-2019
- Scnario 2020-2030
- Scenario 2020-2030-2045

Policy Exercise

Not Robust

INDC

Revised Presidential Regulation 61/2011

RAN-GRK Revision

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EXAMPLES OF SYSTEM DYNAMICS MODEL SIMULATION

Temporary – Indicative Results of Baseline and Policy Scenario Simulations:

- Previous baseline submitted in the SNC is over-estimate ➔ New review baseline is lower than previous, following the trend of inventory.

- Emission per capita will steadily increase, and in contray, Emission per GDP will steadily decrease.

- Indonesia emissions in the long run will be dominated by emission from energy sector (not forestry and peat anymore).

- Role of technology to support better energy mix (favor to renewable energy) and application of clean coal technology will be crucial.

- To offset emissions released from energy sector,
  - Role of forest and peat moratorium and rehabilitation, and
  - Application of fast-growing tree species in forest rehabilitation with high percentage on planting success rate

  will play important role.

STEPS FORWARD:

- **Finalizing the review model and put the simulation results in the cabinet table for the decision.**
  - First meeting had been conducted in 15 June 2015
  - Second meeting is scheduled around July after Ied Fitr day.

- **Discuss and submit the INDC document**
  - Draft 1 has been produced by Bappenas.
  - The draft is still waiting for the results of simulation.
  - The cabinet meeting will be conducted around July after Ied Fitr day.
  - Submission to UNFCCC will be about in Aug – Sep 2015.

Thank you for your attention

Further Contact:

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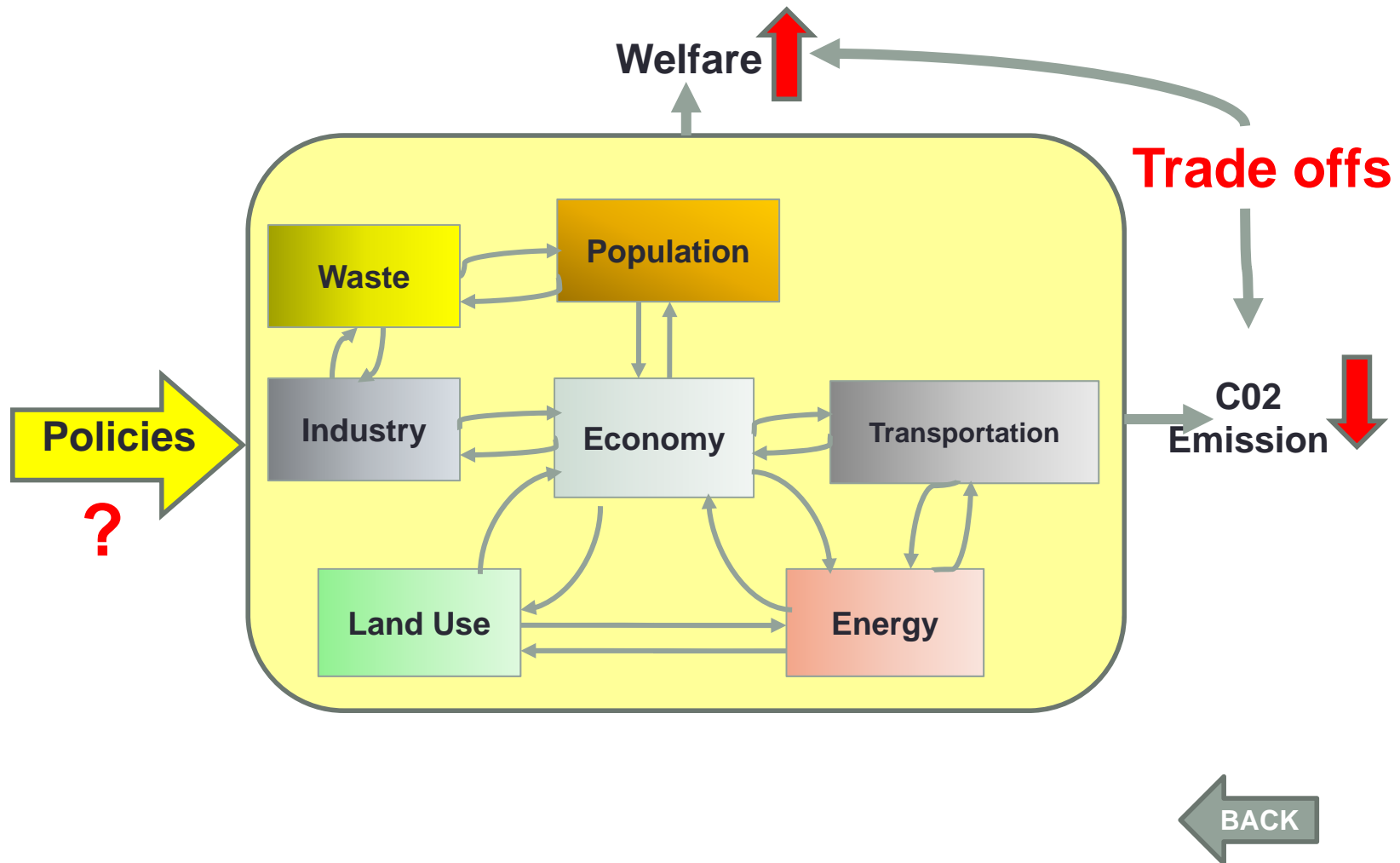
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Conceptualisation of RAN-GRK Review and INDC: Objectives

Methodology: What is System Dynamics?

"System dynamics is a <u>perspective</u> and set of conceptual <u>tools</u> that enable us to <u>understand</u> the <u>structure</u> and <u>dynamics of complex systems</u>. System dynamics is also a rigorous <u>modeling method</u> that enables us <u>to build</u> formal <u>computer simulations</u> of <u>complex systems</u> and use them to <u>design</u> more <u>effective policies</u> and organizations."

(Source: John Sterman, "Business Dynamics: Systems Thinking and Modeling for a Complex World")

Why System Dynamics for RAN-GRK Review?

- Support policy makers <u>to understand and assess complex relationships</u> between parameters (feedback relationship) among the RAN-GRK sectors.

- Allow policy makers to <u>overview the implications</u> of policy scenarios being designed <u>over time</u>. ➔ find leverage policies and avoid counter intuitive policy impacts.

- Allow policy makers to <u>put some constrains/</u> limitations (for example carrying capacity) into policy scenario exercises.

- Provide policy makers <u>a 'room' to communicate</u> each other on policy design exercises.

- <u>Easy</u> to understand <u>without</u> using too many <u>complex mathematical equations</u>.

- Accommodate <u>qualitative parameters</u>.