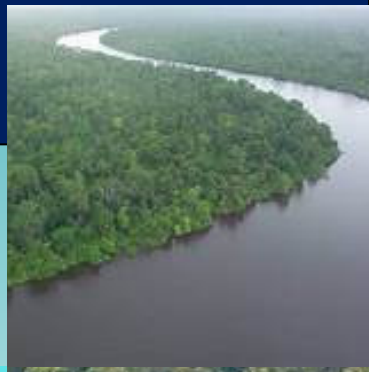
Direktorat Jenderal Pengendalian Perubahan Iklim
Kementerian Lingkungan Hidup dan Kehutanan

A JUST AND AFFORDABLE TRANSITION TOWARDS NET ZERO EMISSION

22 July 2021





OUTLINE

1. National Interest, NDC and LTS-LCCR
2. Road Map NDC
3. Towards LTS-LCCR 2050

1. NATIONAL INTERESTS, NDC AND LTS LCCR 2050

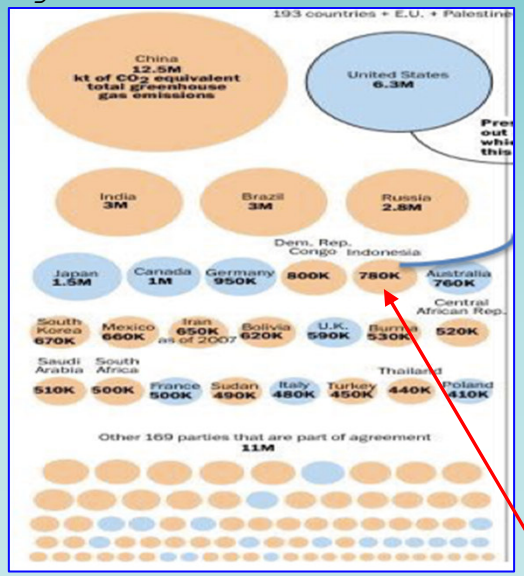
Climate Vulnerability

Geographical and climatological condition

Increase of cases of hydrometeorological disaster

The need to improve climate resilience

Among the biggest global GHG emitter



MenLHK : to implement PA is to implement the mandate of the constitution of UUD 1945 (Pasal 28 H butir 1)

THE FIRST NDC INDONESIA 2016

UPDATED NDC INDONESIA 2021

LTS-LCCR 2050, 2021

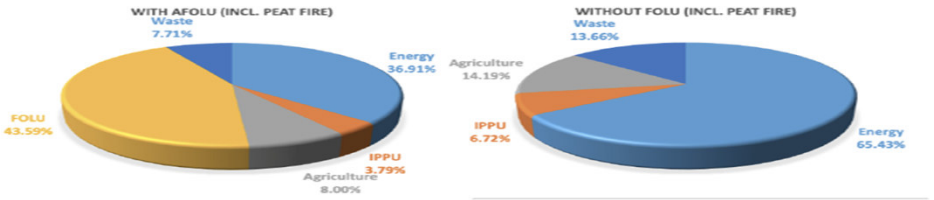


Figure 1. National GHG Emissions (CO_2, CH_4, N_2O) by Sector in 2016

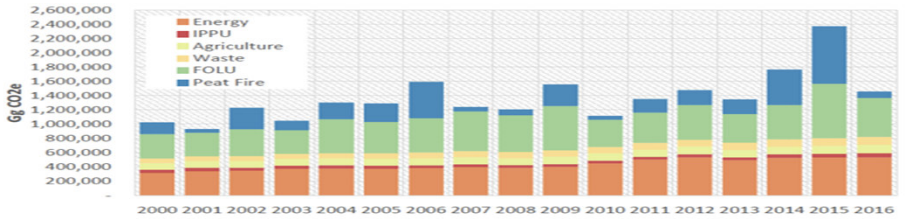


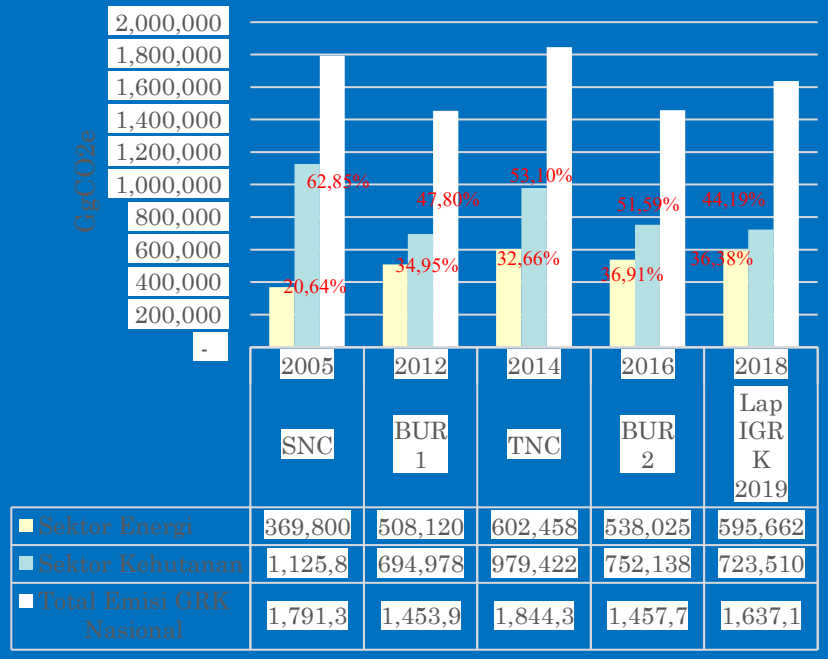
Figure 2. National GHG Emissions Trend (incl. peat fire) in 2000 – 201

2016: 1,461,367 Gg CO_2e (5 gases)

Source: *Indonesia's Second Biennial Update Report, 2018.*

THE FIRST NDC INDONESIA AND NATIONAL GHG INVENTORY

Tingkat Emisi Gas Rumah Kaca Pada Sektor Energi, Sektor Kehutanan dan Total Emisi GRK Nasional



	2005 SNC	2012 BUR 1	2014 TNC	2016 BUR 2	2018 Lap IGRK 2019
Sektor Energi	369,800	508,120	602,458	538,025	595,662
Sektor Kehutanan	1,125,8	694,978	979,422	752,138	723,510
Total Emisi GRK Nasional	1,791,3	1,453,9	1,844,3	1,457,7	1,637,1

2015-2018: Tingkat emisi GRK sektor energi meningkat, sektor kehutanan menurun

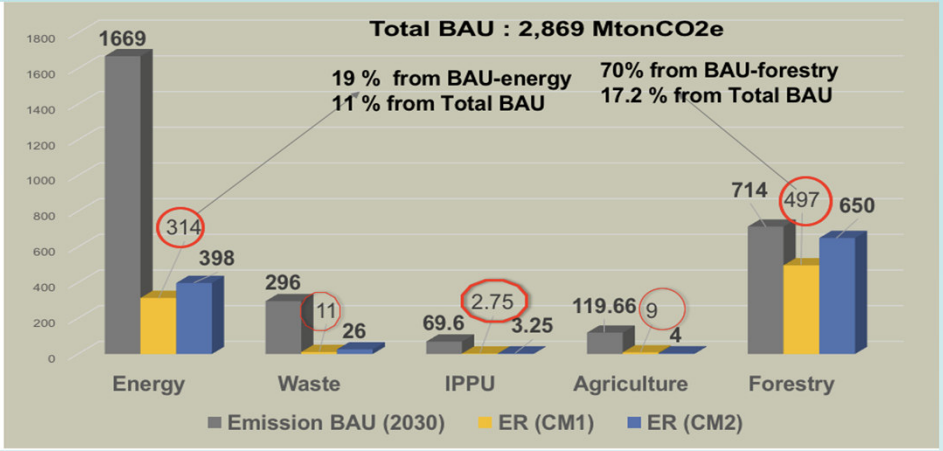
THE FIRST NATIONALLY DETERMINED CONTRIBUTION

Projected BAU and emission reduction from each sector category

No	Sector	GHG Emission Level 2010* MTon CO_2e	GHG Emission Level 2030 (MTon CO_2e) BaU	CM1	CM2	GHG Emission Reduction (MTon CO_2e) CM1	CM2	% of Total BaU CM1	CM2	Annual Average Growth BAU (2010-2030)	Average Growth 2000-2012*
1	Energy*	453.2	1,669	1,355	1,271	314	398	11%	14%	6.7%	4.50%
2	Waste	88	296	285	270	11	26	0.38%	1%	6.3%	4.00%
3	IPPU	36	69.6	66.85	66.35	2.75	3.25	0.10%	0.11%	3.4%	0.10%
4	Agriculture	110.5	119.66	110.39	115.86	9	4	0.32%	0.13%	0.4%	1.30%
5	Forestry**	647	714	217	64	497	650	17.2%	23%	0.5%	2.70%
	TOTAL	1,334	2,869	2,034	1,787	834	1,081	29%	38%	3.9%	3.20%

* Including fugitive **Including peat fire

Notes: **CM1** = Counter Measure (*unconditional mitigation scenario*)
CM2 = Counter Measure (*conditional mitigation scenario*)



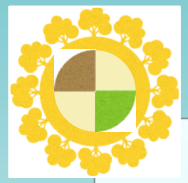
ADAPTATION

Economic Resilience

- Sustainable agriculture and plantations
- Integrated watershed management
- Reduction of deforestation and forest degradation
- Land conservation
- Utilization of degraded land for renewable energy
- Improved energy efficiency and consumption patterns

Social and Livelihood Resilience

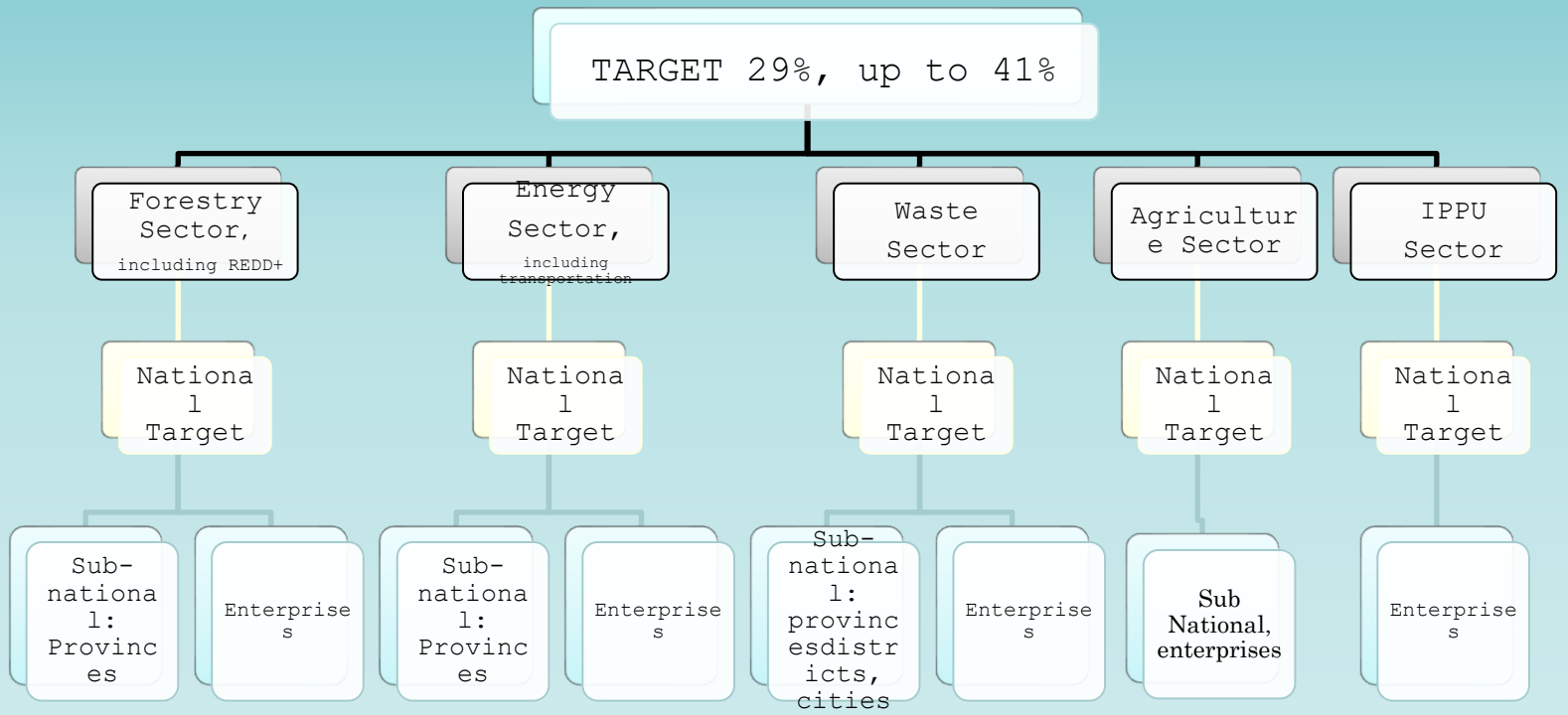
- Enhancement of adaptive capacity by developing early warning systems, broad-based public awareness campaigns, and public health programmes;
- Development of community capacity and participation in local planning processes;
- Ramping up disaster preparedness programmes for natural disaster risk reduction;
- Identification of highly vulnerable areas in local spatial and land use planning efforts.
- Improvement of human settlements, provision of basic services, and climate resilient infrastructure development.
- Conflict prevention and resolution.



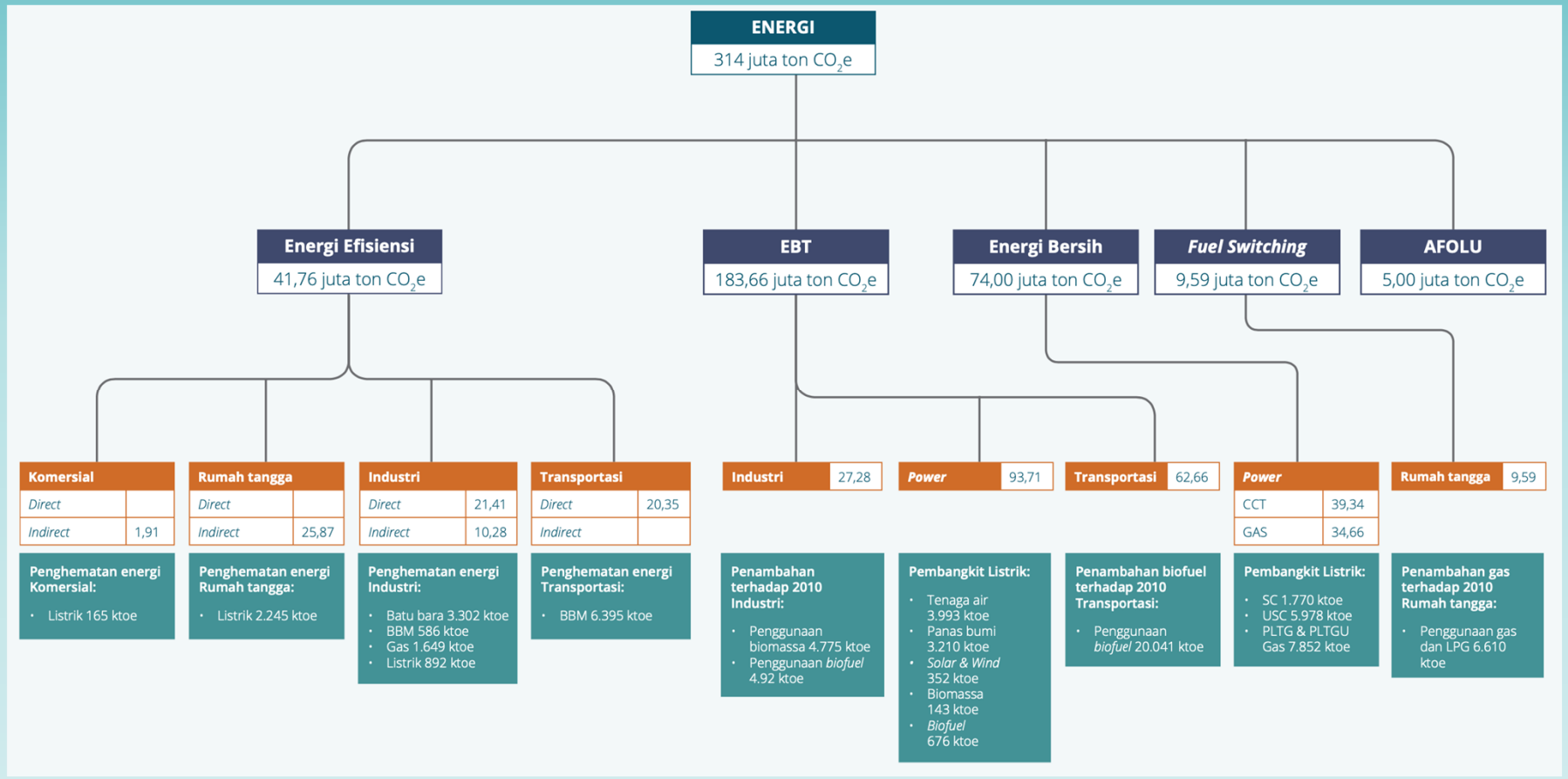
Ecosystem and landscape resilience

- Ecosystem conservation and restoration
- Social forestry
- Coastal zone protection
- Integrated watershed management
- Climate resilient cities

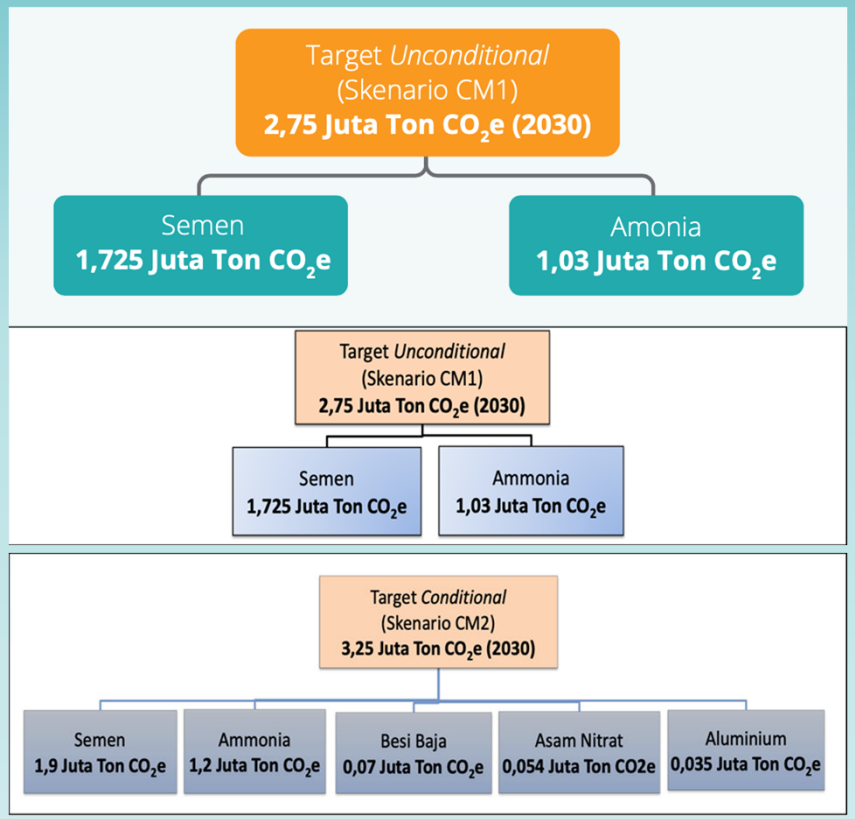
ROLE OF PARTY AND NON-PARTY STAKEHOLDERS

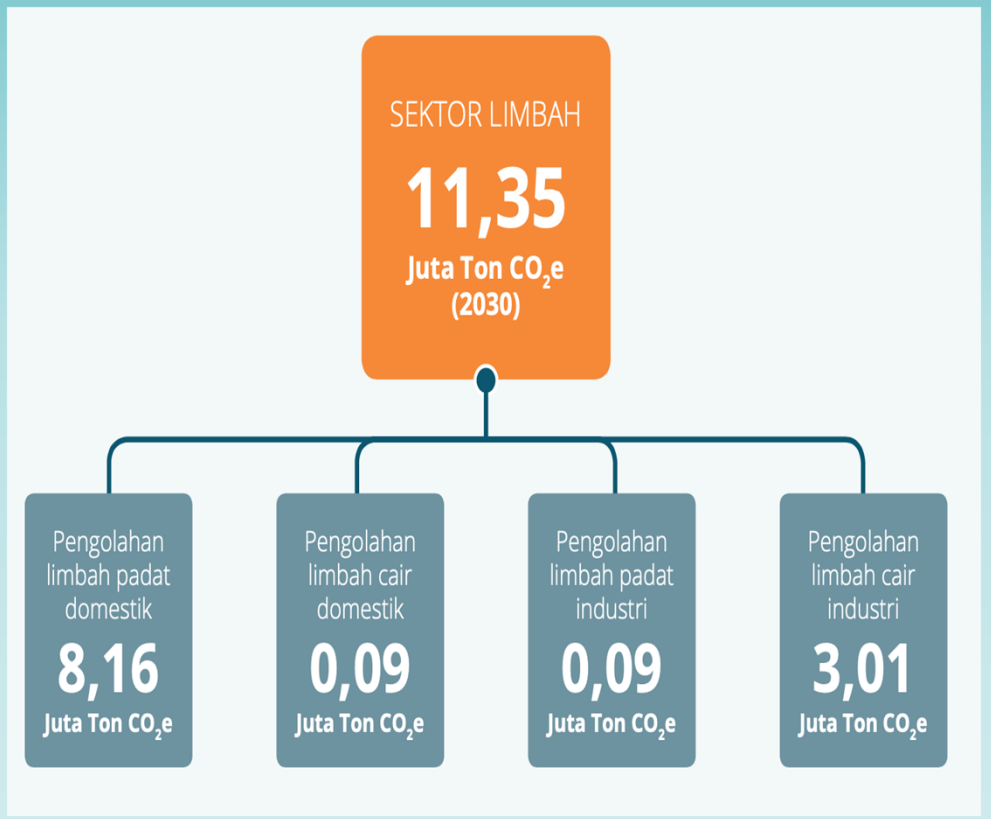


Road Map NDC: Target in ENERGY SECTOR



Road Map NDC: Target in IPPU and Waste





Road Map NDC: Target in FORESTRY SECTOR

1

Target capaian pengurangan laju deforestasi lahan mineral dan gambut

Kegiatan Aksi	Skenario	Rata-Rata per tahun	Kumulatif			
			2013-2019	2013-2024	2013-2029	2013-2030
Laju Deforestasi Lahan Mineral 000 hektare)	BAU	802	6.023	9.956	13.692	14.433
	CM1	400	3.183	5.056	6.837	7.193
	CM2	229	2.081	3.072	3.943	4.117
	Aktual[2]	512	2.562	-	-	-

2

Kegiatan Aksi	Skenario	Rata-Rata per tahun	Kumulatif			
			2013-2019	2013-2024	2013-2029	2013-2030
Laju Deforestasi Lahan Gambut 000 hektare)	BAU	61	408	668	1.025	1.104
	CM1	4	32	56	72	75
	CM2	2	19	28	32	33
	Aktual[2]	149	743	-	-	-

3

Target capaian pengurangan laju degradasi hutan di lahan mineral dan gambut

Kegiatan Aksi	Skenario	Rata-Rata Per tahun	Kumulatif dari tahun 2013			
			2013-2019	2013-2024	2013-2029	2013-2030
Laju Degradasi Lahan Mineral (000 hektare)	BAU	818	6.114	10.129	13.960	14.721
	CM1	400	3.191	5.065	6.848	7.205
	CM2	233	2.110	3.124	4.022	4.203
	Aktual[2]	369	1.844	-	-	-

4

Kegiatan Aksi	Skenario	Rata-Rata Per tahun	Kumulatif dari tahun 2013			
			2013-2019	2013-2024	2013-2029	2013-2030
Laju Degradasi Lahan Gambut (000 hektare)	BAU	62	410	672	1.030	1.109
	CM1	4	33	56	73	76
	CM2	2	20	29	33	34
	Aktual[2]	16	80	-	-	-

5

Target capaian NDC kegiatan aksi peningkatan pembangunan HTI

Kegiatan Aksi	Skenario	Rata-rata per tahun	Kumulatif dari tahun 2011			
			(2019)	(2024)	(2029)	(2030)
Laju Pembangunan HTI (x1000 hektare)	BAU	150	6.020	6.770	7.520	7.670
	CM1	320	7.550	9.150	10.750	11.070
	CM2	320	7.550	9.150	10.750	11.070
	Aktual*		4.670	-	-	-

*Luas hutan tanaman total tahun 2017 berdasarkan analisis citra yang ada di dalam dan luar kawasan

6

Target capaian NDC kegiatan aksi pengelolaan hutan lestari

Kegiatan Aksi	Skenario	Rata-rata per tahun	Kumulatif			
			2011-2019	2011-2024	2011-2029	2011-2030
Pengelolaan Hutan Lestari (000 ha)	BAU	23	83	202	369	409
	CM1	170	647	1.542	2.773	3.058
	CM2	321	1.276	2.982	5.265	5.784
	Aktual	-	-	-	-	-

7

Target capaian NDC kegiatan aksi rehabilitasi lahan tanpa rotasi

Kegiatan Aksi	Skenario	Rata-Rata Per tahun	Kumulatif dari tahun 2011			
			(2019)	(2024)	(2029)	(2030)
Laju Rehabilitasi Lahan Tanpa Rotasi (000 hektare)[1]	BAU	97	877	1.265	1.556	1.944
	CM1	104	932	1.452	1.972	2.076
	CM2	173	1.558	2.405	3.288	3.461
	Aktual	-	484	-	-	-

[1] Tingkat keberhasilan (*survival rate*) untuk BAU antara 21% dan 23%, CM1 antara 23% dan 30% dan CM2 antara 25% dan 38%.

8

Target capaian NDC kegiatan aksi rehabilitasi lahan dengan rotasi

Kegiatan Aksi	Skenario	Rata-Rata per tahun	Kumulatif dari tahun 2011			
			(2019)	(2024)	(2029)	(2030)
Laju Rehabilitasi Lahan Dengan Rotasi (000 hektare)[1]	BAU[1]	110	986	1.536	2.086	2.196
	CM1[2]	173	1.558	2.423	3.288	3.461
	CM2[3]	156	1.399	2.179	2.959	3.115
	Aktual	-	-	-	-	-

Catatan: Tingkat keberhasilan (*survival rate*) untuk [1]BAU antara 52% dan 57%, [2]CM1 antara 54% dan 65% dan [3]CM2 antara 57% dan 76%.

9

Target capaian NDC kegiatan aksi restorasi gambut

Kegiatan Aksi	Skenario	Rata-rata per tahun	Kumulatif			
			2011-2019	2011-2024	2011-2029	2011-2030
Restorasi Gambut (000 ha)[3]	BAU	-	-	-	-	-
	CM1	70	489	837	1.186	1.256
	CM2	156	1.091	1.871	2.651	2.807
	Aktual[2]	-	-	-	-	-

10

Target capaian NDC kegiatan aksi perbaikan tata air lahan gambut

Kegiatan Aksi	Skenario	Rata-Rata (2013-2030)	Kumulatif			
			(2013-2019)	(2013-2024)	(2013-2029)	(2013-2030)
Perbaikan tata air gambut (000 hektare)	BAU	-	-	-	-	-
	CM1	-	634	864	864	864
	CM2	-	749	864	864	864
	Aktual	-	-	-	-	-

Road Map NDC: Target in Agriculture

Target capaian NDC kegiatan aksi mitigasi penggunaan varietas padi rendah emisi

Skenario	Rata-Rata per tahun	Kumulatif			
		2011-2019	2011-2024	2011-2029	2011-2030
BAU	-	-	-	-	-
CM1 (000 hektare)	45	410	636	862	908
CM2 (000 hektare)	49	422	666	918	969

Target capaian NDC kegiatan aksi mitigasi peningkatan sistem pengairan sawah

Kegiatan Aksi	Skenario	Rata-Rata per tahun	Kumulatif			
			2011-2019	2011-2024	2011-2029	2011-2030
Penerapan Sistem Pengairan Sawah Lebih Hemat Air (000 hektare)	BAU	29	125	332	540	581
	CM1	98	608	1.219	1.830	1.953
	CM2	103	624	1.277	1.937	2.070
	Aktual[2]	-	-	-	-	-

Target capaian NDC kegiatan aksi mitigasi pemanfaatan limbah ternak untuk biogas

Kegiatan Aksi	Skenario	Rata-Rata per tahun	Kumulatif Akhir 2019	Kumulatif (akhir 2024)	Kumulatif Akhir 2029	Kumulatif akhir 2030
Pemanfaatan Limbah Ternak Untuk Biogas (000 hewan ternak)	BAU	-	-	-	-	-
	CM1	17	64	153	283	314
	CM2	17	64	153	283	314

Target capaian NDC kegiatan aksi mitigasi perbaikan suplemen pakan ternak

Kegiatan Aksi	Skenario	Rata-Rata per tahun	Kumulatif Akhir 2019	Kumulatif (akhir 2024)	Kumulatif Akhir 2029	Kumulatif akhir 2030
Perbaikan Suplemen Pakan (000 hewan ternak)	BAU	-	-	-	-	-
	CM1	639	2.414	5.708	10.469	11.602
	CM2	639	2.414	5.708	10.469	11.602

3. Towards LTS-LCCR 2050

Long-term Strategy for Low Carbon and Climate Resilience 2050

TOWARDS LOW CARBON AND CLIMATE RESILIENCE

Mandates:

PA Art. 4.19: All Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies .....

Dec. 1/CP.21 Para 35: *Invites* Parties to communicate, by 2020, to the secretariat mid-century, long-term low greenhouse gas emission development strategies in accordance with Article 4, paragraph 19, of the Agreement.....

The First NDC

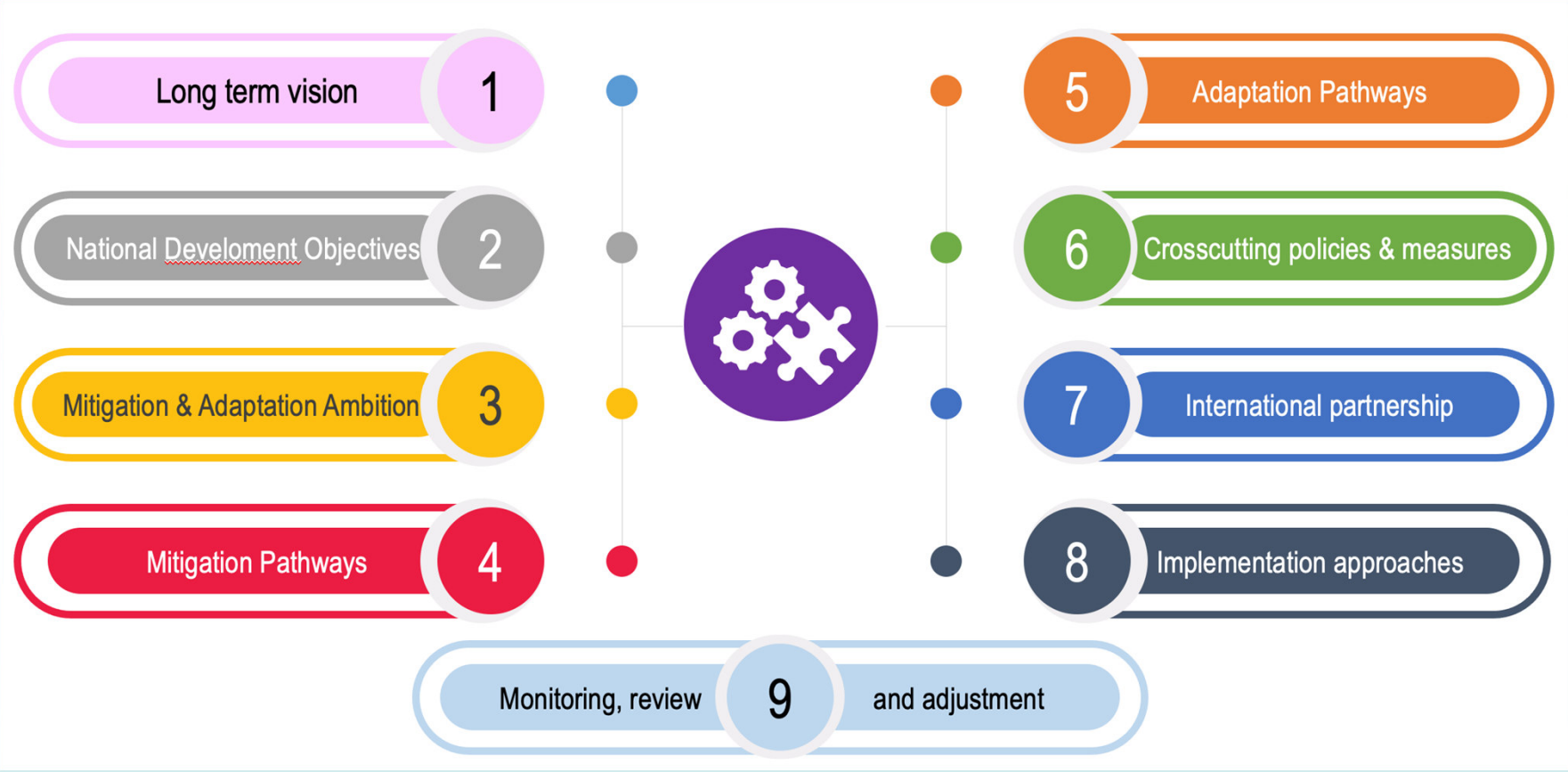
Towards a developed and prosperous Indonesia

Towards Net Zero Emission

Net Zero Emission

2020 — 2030 — 2045 — 2050 — 2060 or sooner

LTS-LCCR 2050: STRUCTURE



LTS-LCCR 2050: L T V ~ long-term vision

Role of LTS-LCCR 2050

- aligning the climate goals and targets with national, sub-national and international objectives including SDGs
- NPS, innovation, enabling communities

Visi Indonesia 2045

towards a developed and prosperous Indonesia: (a) HRD and science and technology advancement, (b) sustainable economic development, (c) equitable development, and (d) strengthening national resilience and public sector governance.

Mitigation

- three pathway scenarios on 5 sector categories (AFOLU, energy, waste, IPPU)
  - **CPOS**: extended NDC/current policy scenario
  - **TRNS**: transition scenario
  - **LCCP**: low carbon scenario compatible with Paris Agreement target

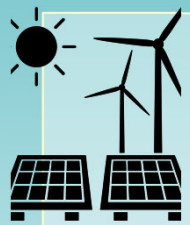
Adaptation

- the goal to reduce the impact of climate change on national GDP trough increasing resilience on:
  - 4 basic necessities: food, water, energy, and environmental health
  - 3 following target areas of resilience : economy, social and livelihood, ecosystem and landscape

MAIN MITIGATION ACTIONS

Net sink in 2030,

Reduce deforestation, increase SFM, peat restoration, afforestation and reforestation, BECCS,



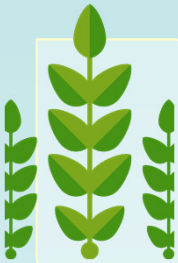
RE: solar PV, hydro, wind, EV, biomass biofuel, tidal,waste

NE: hydrogen,

CCS/CCUS, BECCS,

Increase clinker cement ratio, increase advanced tech in ammonia plants, secondary catalyst in destruction of N2O, technology improvement in metal industry

Increase the number of 3R, composting, landfill+LFG, biodigester, sludge recovery, RDF/SRF, POME



Reduce land conversion for rice field, maximum land conversion for plantation, utilisation of unproductive land

A JUST TRANSITION

An effective and inclusive transition to low greenhouse gas emission and climate resilient development

just transition of the workforce, creation of decent work and quality jobs, address the needs of gender equality and justice, inter generation and vulnerable groups

just transition issues will be addressed in synergy with ongoing transition towards a developed and prosperous Indonesia.

Key interventions

- Challenges in transitioning to low GHG emission and ensuring decent future for workers affected by the transition
- Promoting low greenhouse gas emission and sustainable economic activities that will create quality jobs
- Enhancing capacity of workforces to facilitate access to decent work and quality jobs
- Enhancing participatory public dialogue to foster high employment rates, adequate social protection, labour standards and wellbeing of workers and their communities.

AN AFFORDABLE TRANSITION

Stranded Asset, lock-in fossil power plant, migration to green job

Net sink in 2030,
Reduce deforestation, increase SFM, peat restoration, afforestation and reforestation, BECCS,

RE: solar PV, hydro, wind, EV, biomass biofuel, tidal,waste
NE: nuclear, hydrogen,
CCS/CCUS, BECCS,

Increase clinker cement ratio, increase advanced tech in ammonia plants, secondary catalyst in destruction of N2O, technology improvement in metal industry

Increase the number of 3R, composting, landfill+LFG, biodigester, sludge recovery, RDF/SRF, POME

Reduce land conversion for rice field, maximum land conversion for plantation, utilisation of unproductive land

INVESTMENT

- Investment for transformation technology to increase production under emission reduction target.
- in AFOLU (mechanisation at agricultural inputs, land management, R&D).
- Additional investment for technology adoption in energy sector (increase energy efficiency, renewable energy and adopt CCS/CCUS technology.

INTERNATIONAL COOPERATION

- Research
- Technology Cooperation
- Financial flows
- Capacity development

Example of investment cost in The First NDC:

- Energy (Rp.3.500 T)
- IPPU (915 M)

Thank you