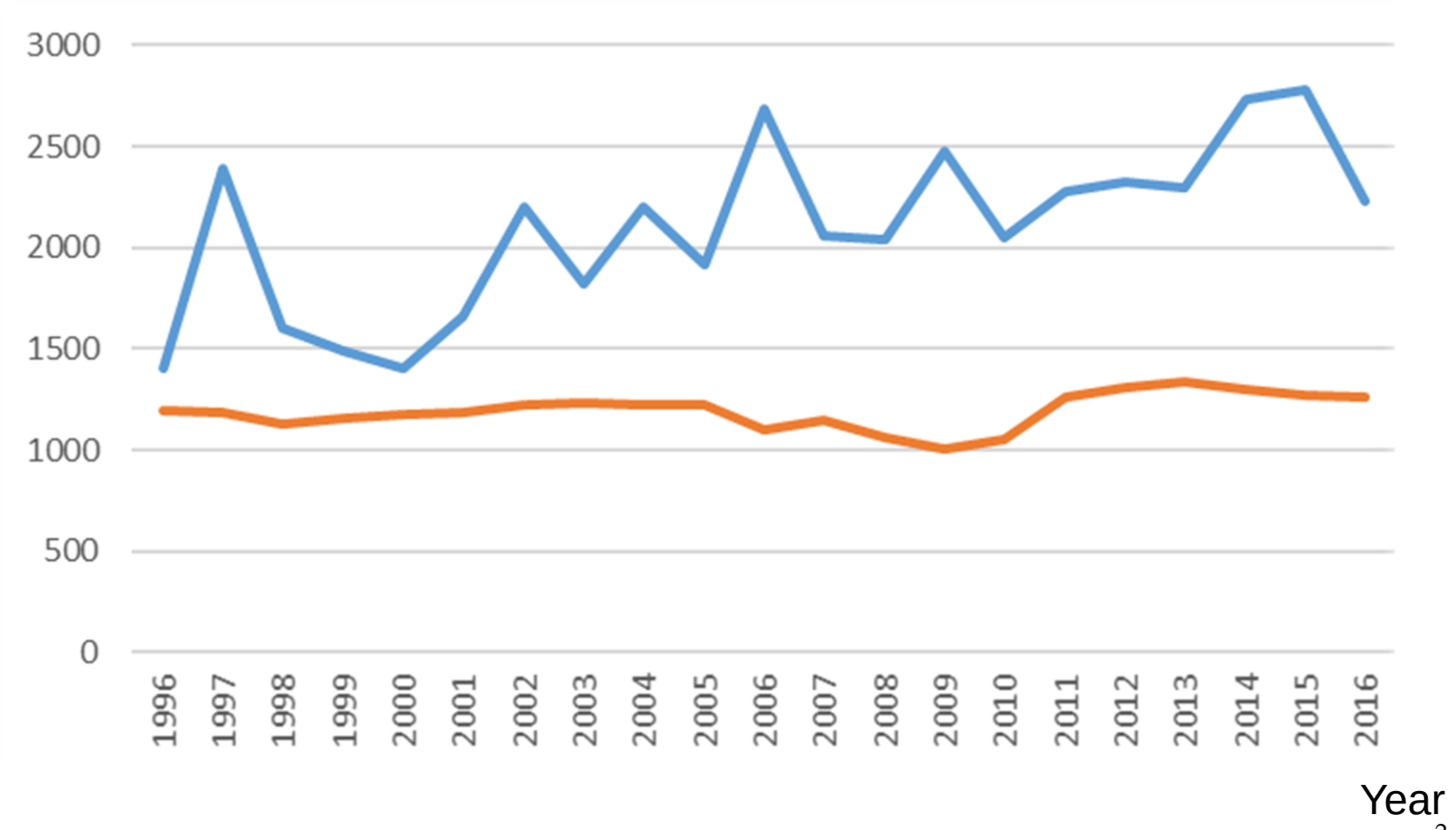
Climate Change Mitigation in Indonesia

Jun Ichihara

GHG Emissions in Indonesia and Japan

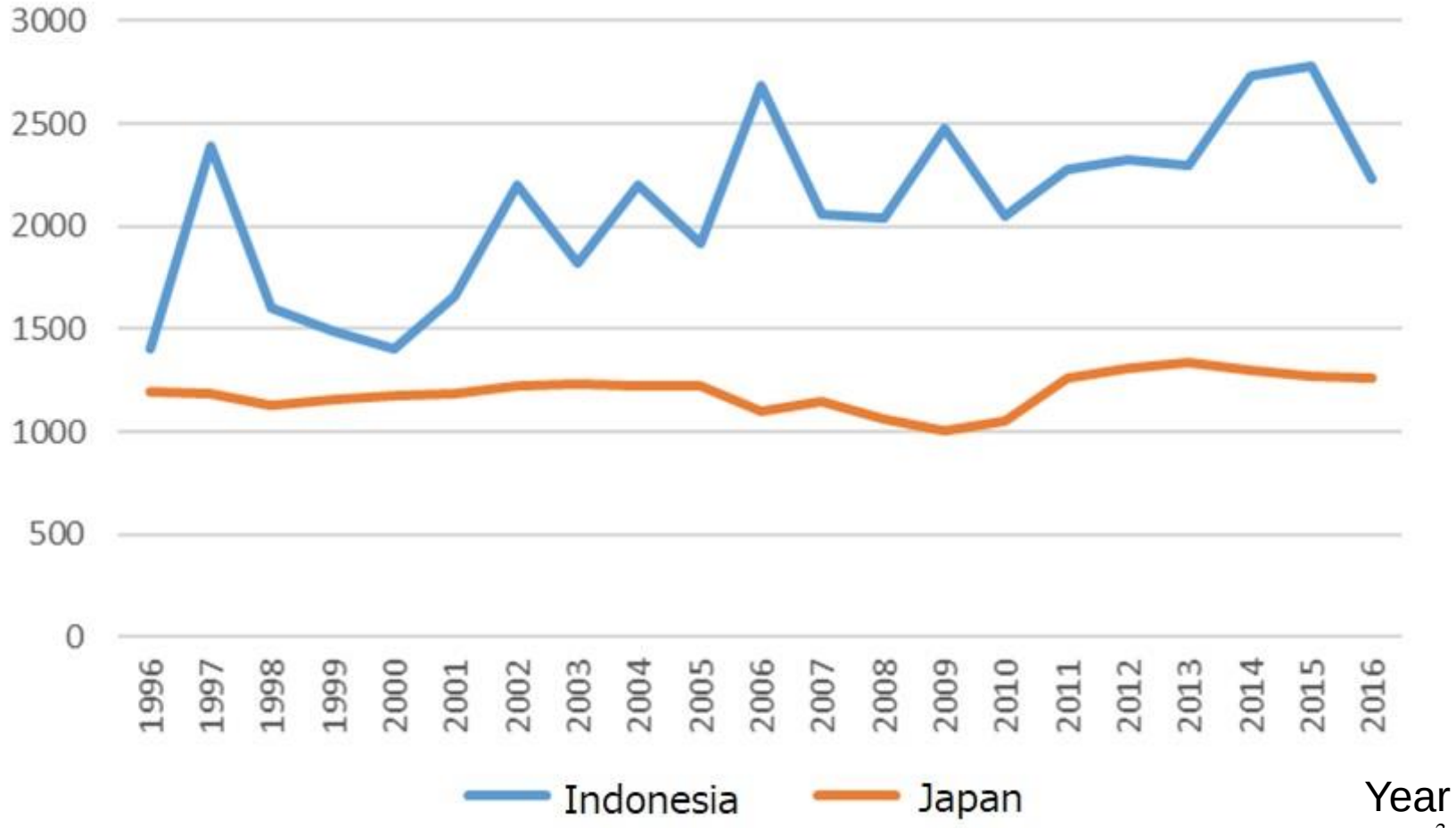
GHG Emissions ($MtCO_2e$)

Question: which is Japan's GHG emission?



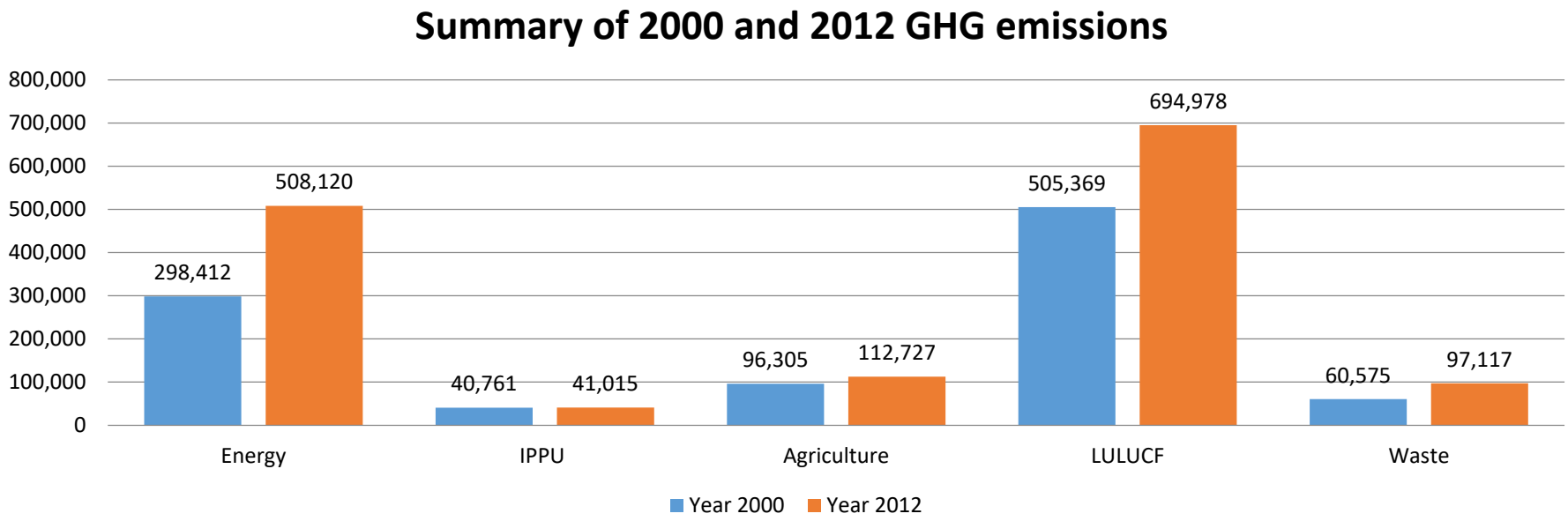
GHG Emissions in Indonesia and Japan

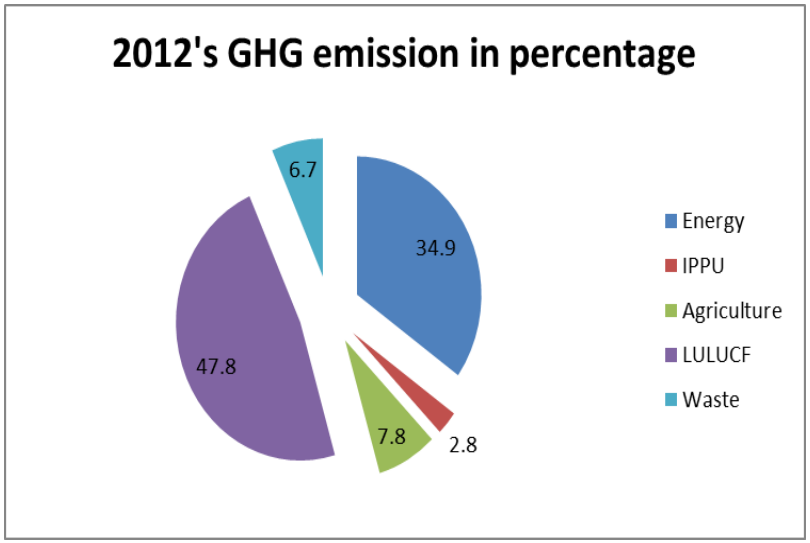
GHG Emissions
($MtCO_2e$)



Source : World Energy Balances 2020 (IEA), Climate Watch Data Explorer <https://www.climatewatchdata.org/data-explorer>

GHG Emissions in Indonesia





- Huge emissions from forestry and land use change (LULUCF)
- 4th Largest population in the world: 268 Million

Source: Indonesia 1st BUR submission to UNFCCC

Indonesia's First NDC

- First NDC was submitted on November 9, 2016.
- Unconditional reduction: 29% by 2030
- Conditional reduction: 41% by 2030
- Most of emission reduction are done by Forestry and Energy Sectors

Table 1. Projected BAU and emission reduction from each sector category

No	Sector	GHG Emission Level 2010*	GHG Emission Level 2030 (MTon CO_2e)			GHG Emission Reduction (MTon CO_2e)		GHG Emission Reduction % of Total BaU		Annual Average Growth BAU (2010-2030)	Average Growth 2000-2012*
		MTon CO_2e	BaU	CM1	CM2	CM1	CM2	CM1	CM2		
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%

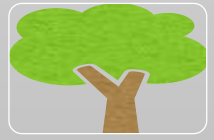
* Including fugitive

**Including peat fire

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

Source : First NDC in Indonesia

Indonesia's NDC : Key Programmes



Forest and peatland

- Reducing deforestation
- Enhancing implementation of sustainable management principles in production forest, both natural forest (reducing forest degradation)) and planted forest
- Rehabilitation of 12 million ha degraded land by 2030 or 800,000 ha/year with 90% survival rate
- Restoration of 2 million ha peatland by 2030 with 90% success rate

Energy

- Efficiency in final energy consumption
- Implementation of clean coal technology in power plant
- Renewable energy in electricity production (19.6 % (RUPTL)**)**
- Implementation of biofuel in transportation sector
- Additional gas distribution lines
- Additional compressed-natural gas fuel station

Source: First NDC in Indonesia (2016)

National Energy Policy (2014)
New and Renewable Energy Target in Energy Mix:
23% share in 2025 and at least 31% in 2025

Technology Needs (examples of energy and transport)

Sub Sector	Technology Needs
Transport	Improvement of public transport; CNG; Intelligent Transport System
Power Generation	PV & Pump Storage; Geothermal Power Plant; Advanced Coal Power Plant; Landfill Gas Power Plant; Biomass fuelled power plant; Wind power; Biofuel; Biogas POME
Industry	Efficient Electric Motors; Combine Heat and Power; Pump and Fan System; WHB (Waste Heat Boiler); Alternative Fuel; Green Boiler; Green Chiller; Advanced Furnace
Building (Residential and Commercial)	Combine Heat and Power ; WHB (Waste Heat Boiler); Efficient Lighting; Green Building; Green Boiler; Green Chiller; Efficient Electric Motors; Gas pipeline network; Solar PV; Solar Water Heater

Source: Indonesia Second BUR Report (2018)

Examples of Technology Transfer under JCM

High Eficiency Chiller

Solar Rooftop

- Leading countries for JCM: 22 registered projects in Indonesia (65 total registered)