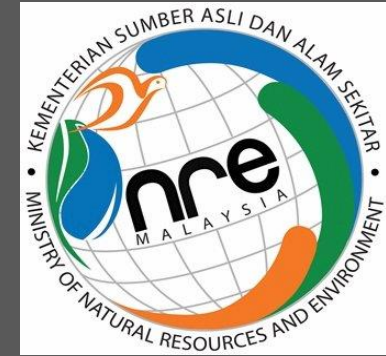


Improvement of Data Collection in Malaysia GHG Inventory for Petrochemical and Iron & Steel Industry

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Outline

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- Total Emissions in IPPU
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- Time Series
- Uncertainty
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- Way Forward

Introduction



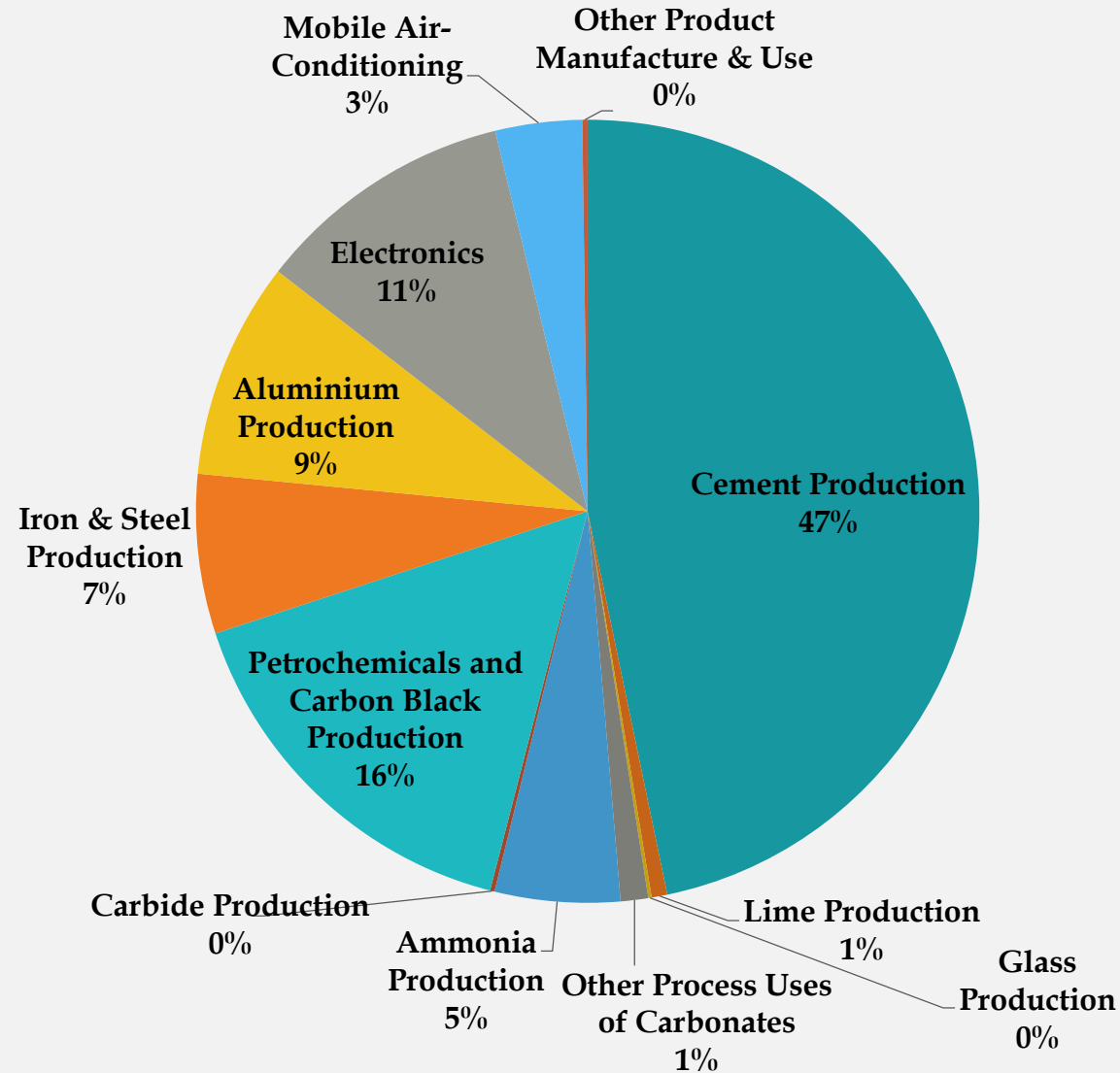
- Located in South-East Asia
- West side: Peninsular Malaysia
- East side: Sabah & Sarawak.
- Capital: Kuala Lumpur
- A multi-racial country consisting of Malay, Chinese, Indian and other races.
- Population: approximately 31 million

Updates on Improvement

Prior Submissions	Improvement
As part of the obligations assumed as a party of the UNFCCC, Malaysia submitted its First National Communication in 2000	Malaysia plans to submit Third NC (TNC) in Dec 2017, and BUR2.
Second National Communication (NC2) was submitted in January of 2011 and the BUR1 in March 2016.	Transitioned from Revised 1996 IPCC Guidelines to 2006 IPCC Guidelines.
All methodology uses Tier 1.	Account for additional sub-sectors as required by new GL.
	Improved data quality and move towards Tier 2



CO2 eq Estimation for 2014 (IPPU)



2B Chemical Industry

- 2B1 Ammonia Production
- 2B5 Carbide Production
- 2B8 Petrochemicals & Carbon Black Production
i.e. Methanol, Ethylene, Ethylene Oxide.

Data Collection Improvement

- Engaged with stakeholders from the industries to participate via a Non-Disclosure Agreement (NDA). The outcome of the NDA has enhanced the data quality and enabled the use of higher tier methodologies.
- This exercise has also reduced much of the overestimations of GHG emissions in the time series, based on:
 - (i) Ammonia – CO₂ recovered from urea production
 - (ii) Ethylene – disaggregating production data based on type of feedstock used by the producer.
- Although the use of country-specific emission factor is not yet apparent in Malaysia, one of the key manufacturers is currently using Tier 3 methodologies to estimate the GHG emissions within its own company's boundaries.

2B1 Ammonia Production

Method: Tier 2 (verified with Tier 3)

Emission Factor:

- Carbon Content of Fuel: 15.3 kg C/GJ
- Fuel Requirement for Ammonia Production: 29.7 GJ/tonne

Activity Data:

- Petronas

2B8 Petrochemicals & Carbon Black

Method:

Tier 1 (verified with Tier 3)

Emission Factor:

Default, based on the type of processes shown in the tables.

Activity Data:

- Petronas, Lotte Chemical Titan

2C Metal Industry

- 2C1 Iron & Steel Production
- 2C3 Aluminium Production

Data Collection Improvement

- Established good relationship with Malaysian Iron and Steel Federation (MISIF), which membership consists of all iron and steelmaking plants in Malaysia.
- Able to disaggregate the production data based on the type of iron and steel-making processes.
- Prior to this exercise, GHG estimations were based on DRI production data, which is associated with higher EF.
- Since 99% of steelmaking plants in the country uses Electric Arc Furnace (EAF) method, the EF reduced significantly which causes the GHG to reduce for this sector.

2C1 Iron & Steel Production

Method: Tier 1

Emission Factor: Default (Table 4.1 2006 IPCC Guidelines)

- Direct Reduced Iron (DRI): 0.7 tonne CO₂ per tonne of DRI.
- Iron Production: 1.35 tonne CO₂ per tonne of pig iron produced
- Electric Arc Furnace (EAF) for Steelmaking: 0.08 tonne CO₂ per tonne of steel produced. (99% plants in Malaysia use this method)

Activity Data:

- Malaysian Iron & Steel Federation (MISIF)

Conclusion

- Malaysia has managed to transition from 1996 IPCC GL to 2006 IPCC GL in soon to be published TNC/BUR2.
- We are trying our best to use higher tier methodology for GHG calculation, from using all Tier 1 calculations in the INC, NC2 and BUR1 for all subsectors to using Tier 2 calculations in categories that are Key Source.
- Engagement with industry stakeholders are crucial as many of them have the resources to the data and their involvement in the GHG calculation process from the start to the finish will provide a more accurate representation of their system/process.

Thank you

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Universiti Tenaga Nasional on behalf of

Ministry of Natural Resources and Environment Malaysia

