



Thailand Greenhouse Gas Emission Inventory System (TGEIS)

Sivach Kaewcharoen
Acting Chief of Database and Knowledge Section

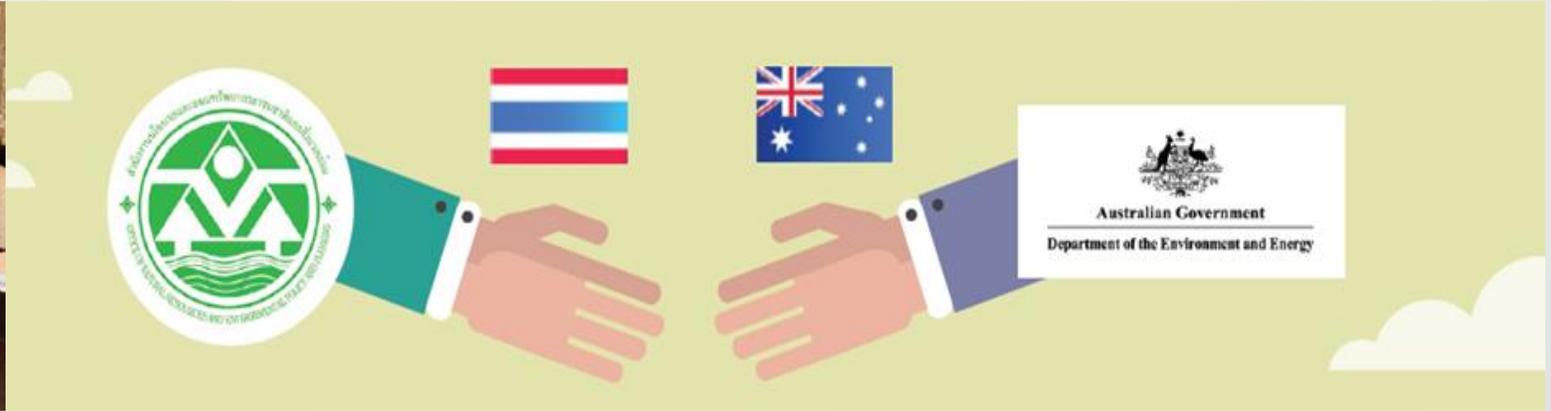
Climate Change Management and Coordination Division (CCMC)
Office of Natural Resources and Environmental Policy and Planning (ONEP)

1 August 2019, Singapore

Outlines

- ❖ 1. What is TGEIS
- ❖ 2. Institutional Arrangement (IA)
- ❖ 3. Data Entry Template (DET)
- ❖ 4. TGEIS operations
- ❖ 5. Challenge

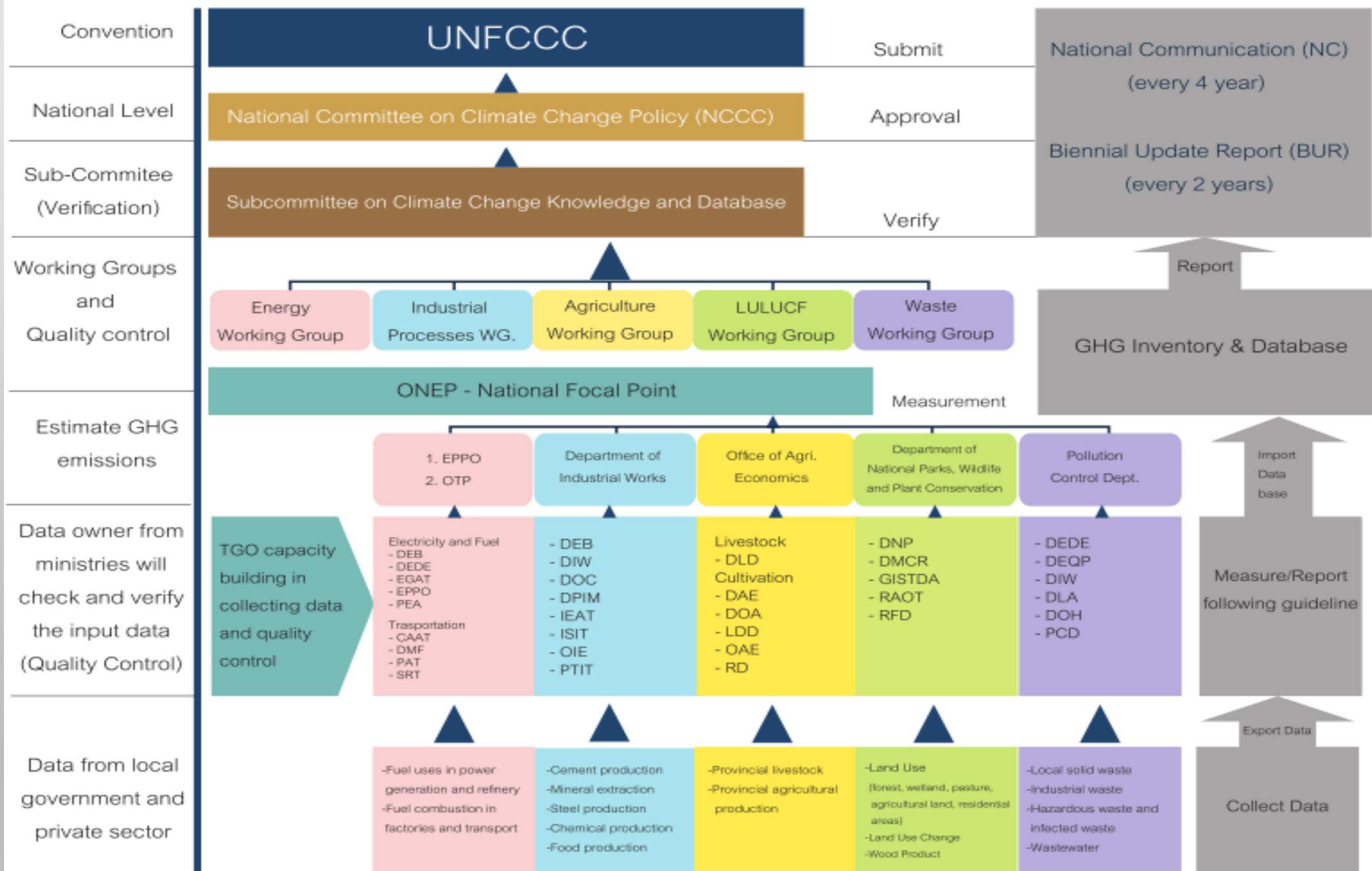
1. What is Thailand Greenhouse Gas Emission Inventory System or TGEIS ?



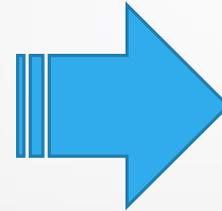
- Emission calculation based on IPCC 2006 guideline and inventory compilation system
- An emissions database that can be queried, graphs produced and data downloaded as reports
- Inbuilt quality control
- Integrated documentation and archive system
- A UNFCCC reporting tool



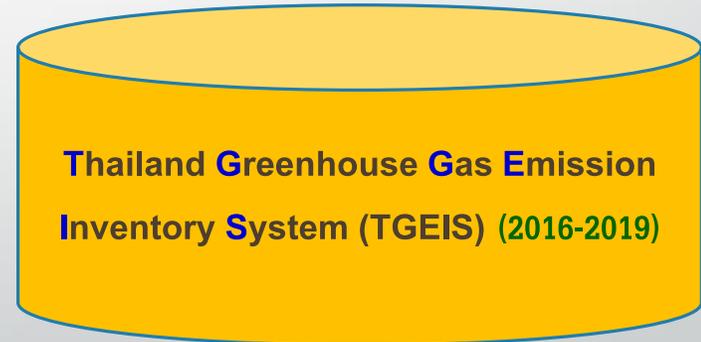
2. Institutional Arrangement (IA)



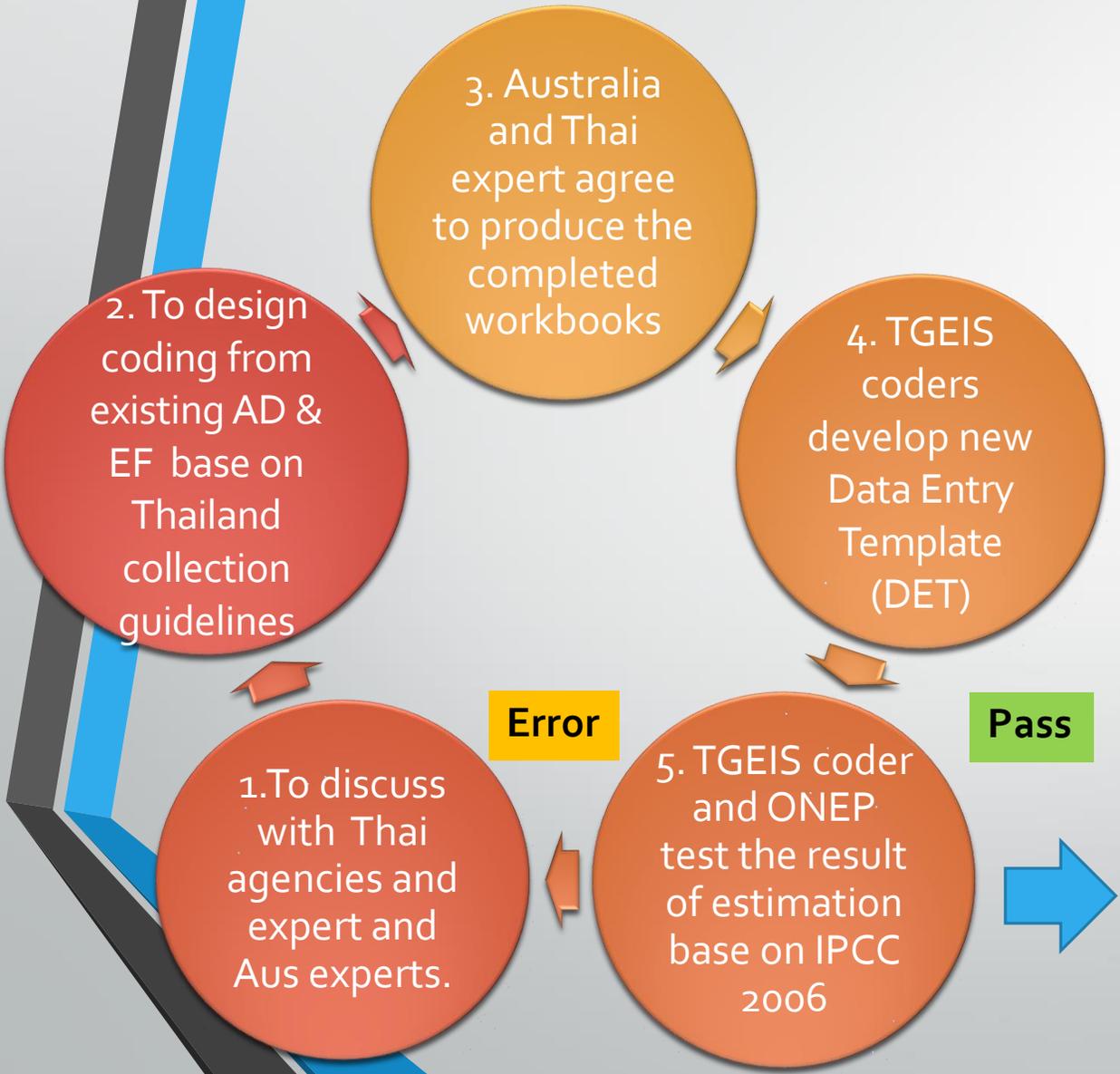
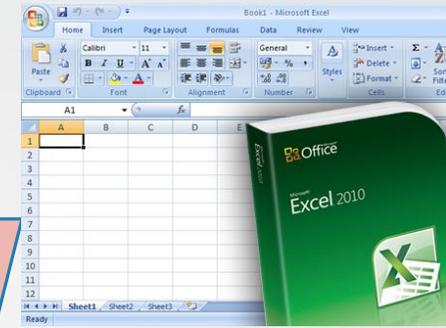
Enhancing for Greenhouse Gas Inventory transition on 1996 to 2006 IPCC Guidelines



Development of collection and reporting GHG inventories guidelines (2015-2018)



3. Data Entry Template (DET)



DET of Energy (4)

DET of Transport (1)

DET of IPPU (8)

DET of Agriculture (5)

DET of LULUCF (1)

DET of Waste (3)

DET of other (2)

Data

Agency

DET of Energy

Annual fuel consumption
(Solid Fuel, Natural gas, LPG,
Gasoline, Diesel)



EGAT
PEA
ERC

DEDE

DEB

DPIM

DMF

Leading
agency

National
Focal Point

EPPO

QC

ONEP

Expert

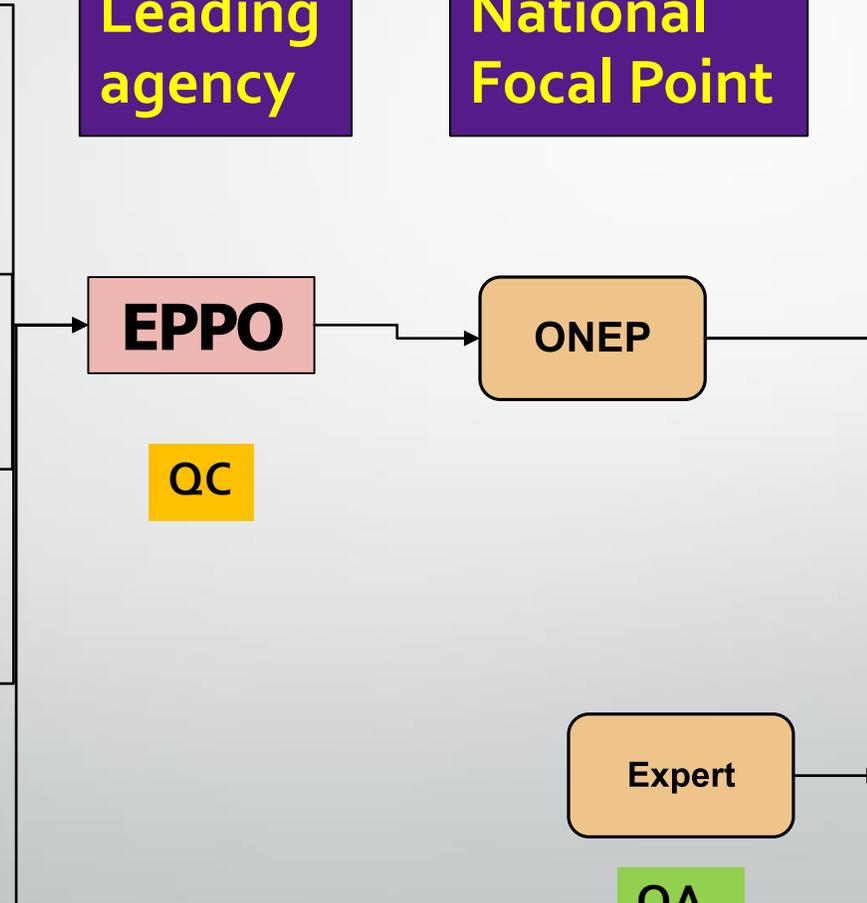
QA

Electricity

Stationary
Energy

Fugitive
Coal & Mining

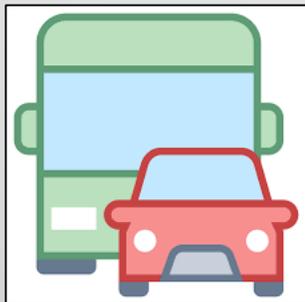
Fugitive
Oil & Gas



Data

Agency

Annual Fuel consumption
by vehicle



DLT

SRT

PAT

CAAT

**Leading
agency**

**National
Focal Point**

OTP

QC

ONEP

Expert

QA

DET of Transport

Road

Railway

Navigation

Aviation

Transport

DET of IPPU

Data



Production

Agency

- OIE
- ISIT
- PTIT
- DIW
- DOC

Leading agency

DIW
QC

National Focal Point

ONEP

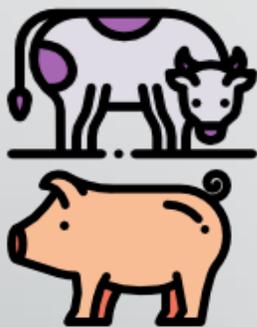
Expert
QA

- Mineral industry
- Chemical industry
- Metal industry
- Electronic industry
- Non energy product
- Other IPPU
- Other product
- F-Gas ??

Data

Agency

Annual Animal Population
(3A1,3A2)
Annual amount of animal
manure (3C5,3C6)



Livestock

DLD

Cultivation

RD

DOA

DAE

LDD

GISDA

Area burnt (3C1b),
Annual amount of calcic
limestone (3C3),
Annual Amount of urea
fertilization (3C4),
Annual harvested area
(3C7)



**Leading
agency**

**National
Focal Point**

OAE

ONEP

QC

**Excel
sheet**

Expert

QA

DET of Agriculture

Cattle Buffalo

**Other
livestock**

Rice

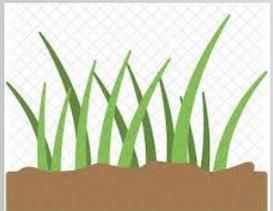
**Agriculture
soil**

Lime Urea

DET of LULUCF

Data

Agency



DNP

RFD

DMCR

RAOT

LDD

GISTDA

Leading
agency

National
Focal Point

DNP

QC

ONEP

Expert

QA

Forest land

Crop land

Land use
Change

Soil carbon

LULUCF

Annual growth / living biomass/
Soil carbon / Land use area

Data

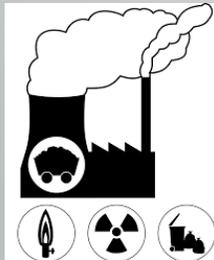
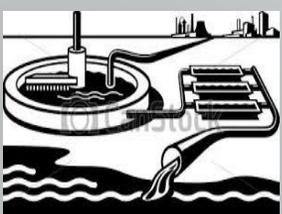
Agency

DET of Waste

Solid waste disposal on Land (4A), Biological treatment of waste (4B), Municipal Solid waste incineration (4C1), Domestic Wastewater treatment and Discharge (4D1)



Industrial Waste incineration (4C1), Industrial Wastewater treatment and Discharge (4D2)



Municipality

DEQP

DLA

DOH

REO1-16

DEDE

Industrial

DIW

DOC

Leading agency

National Focal Point

PCD

ONEP

Excel sheet

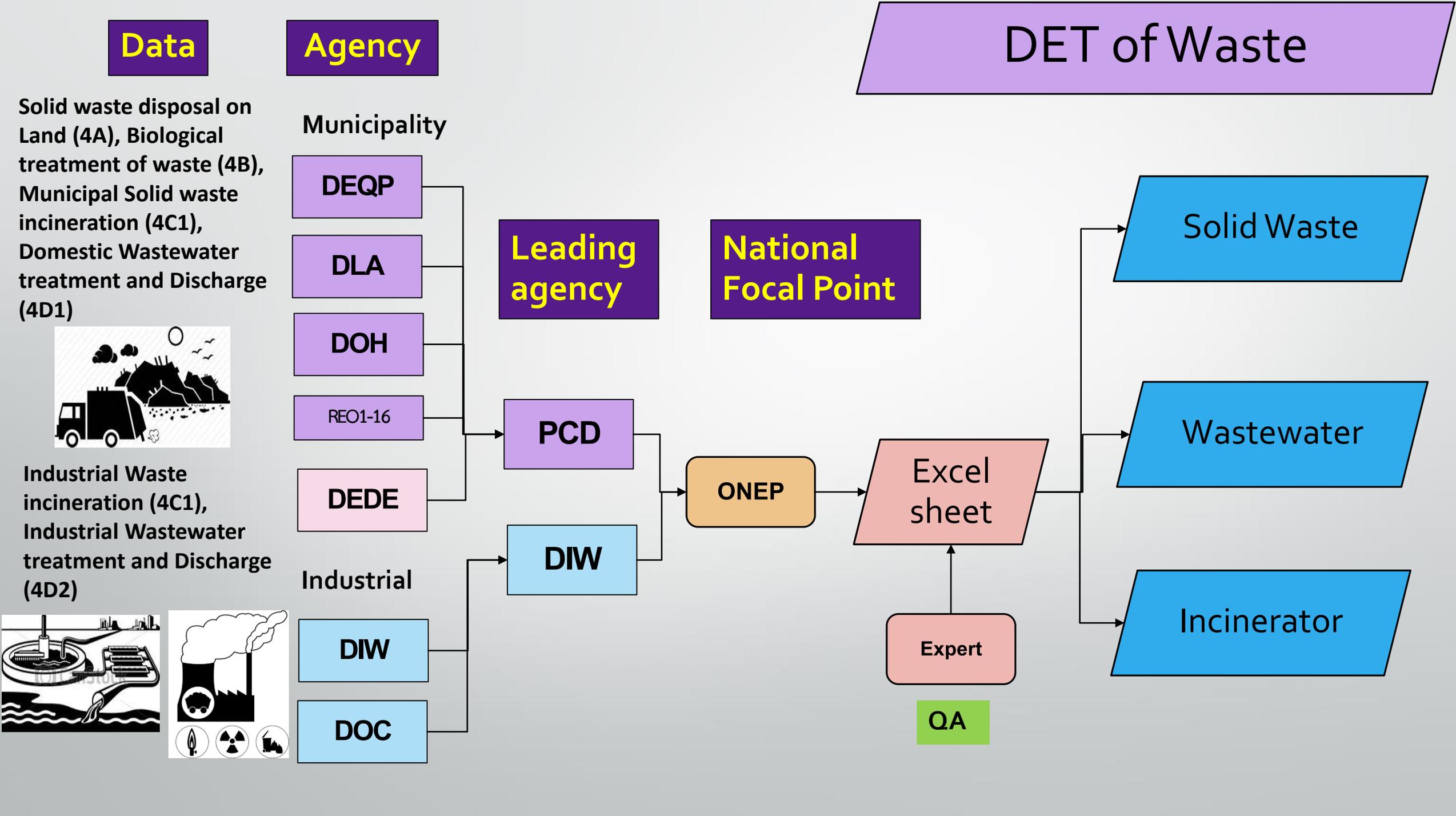
Expert

QA

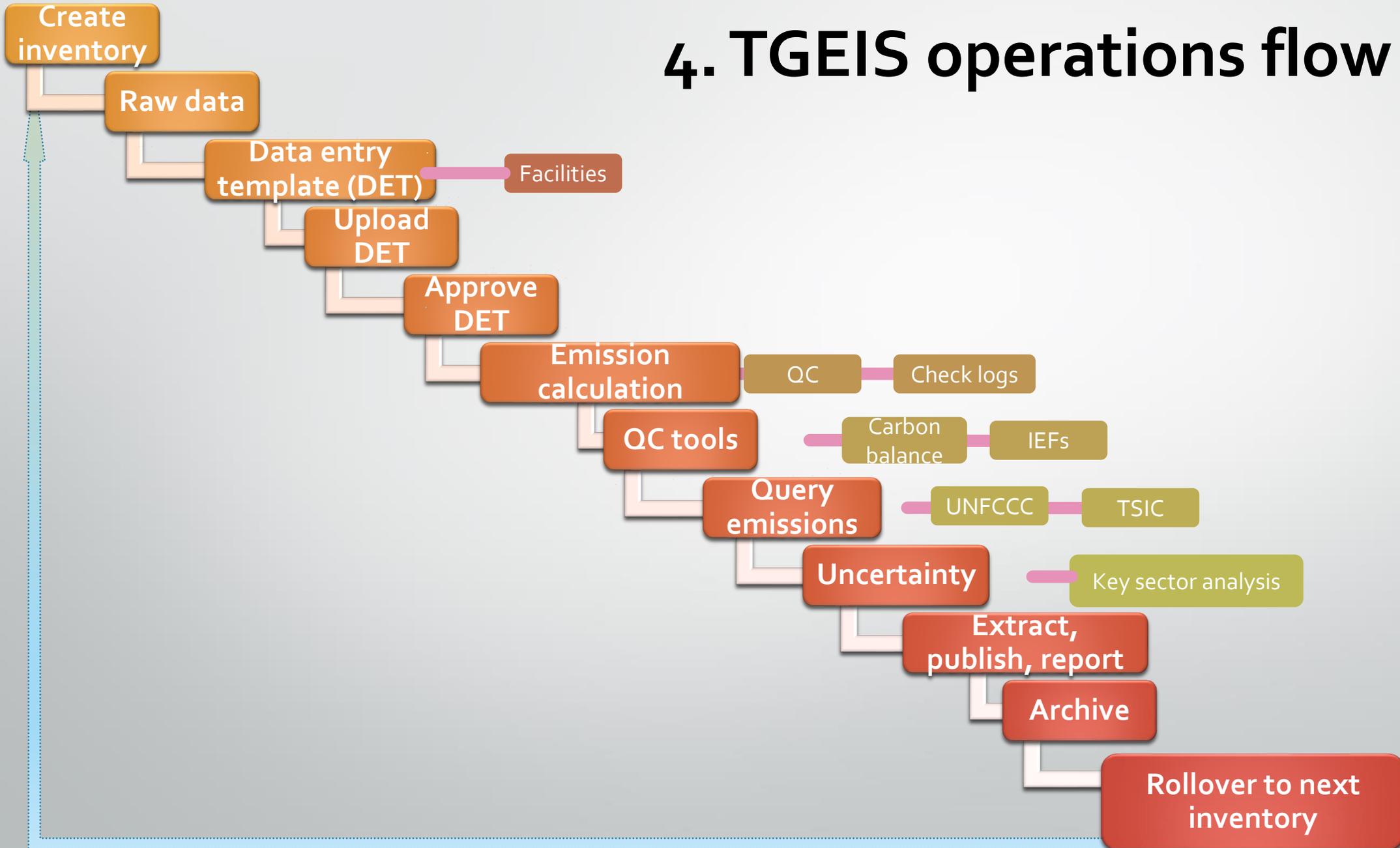
Solid Waste

Wastewater

Incinerator



4. TGEIS operations flow chart



Key functions for inventory management

New inventory

- Create new Inventories
- Flexible frequency

Recalculations

- New methods
- New data

Archive inventory

- Store completed inventories & inputs
- Retrieve and query

Efficiency

- Rollover previous data into new inventory
- Not need to re-enter data

TGEIS

Raw data



Data Entry Templates (DETs)



QC Approval Calculate QC



Emission query



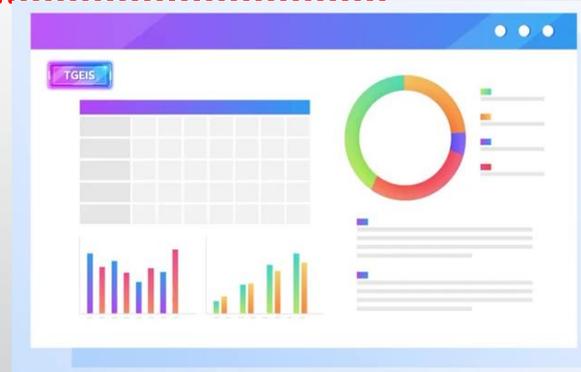
Reports Download UNFCCC tables



Entity	Year	Value	IPCC Indicator	Notes
A.D. Stationary national	2000	31.0000	WKB_1_2015_StationaryEnergy_0	
A.D. Stationary national	2000	3.7000	WKB_1_2015_Electricity_0	
A.D. Stationary national	2000	4.1000	WKB_3_2015_Avtur_0	
A.D. Stationary national	2000	1.0000	WKB_3_2015_OtherRoadTransport_0	
A.D. Stationary national	2000	0.0000	WKB_3_2015_OtherTransport_0	
A.D. Stationary national	2000	0.0000	WKB_3_2015_PetrolPassengerCars_0	



Methodology Name
WKB_1_2015_StationaryEnergy_0
WKB_1_2015_Electricity_0
WKB_3_2015_Avtur_0
WKB_3_2015_OtherRoadTransport_0
WKB_3_2015_OtherTransport_0
WKB_3_2015_PetrolPassengerCars_0



Input



Estimate



Output

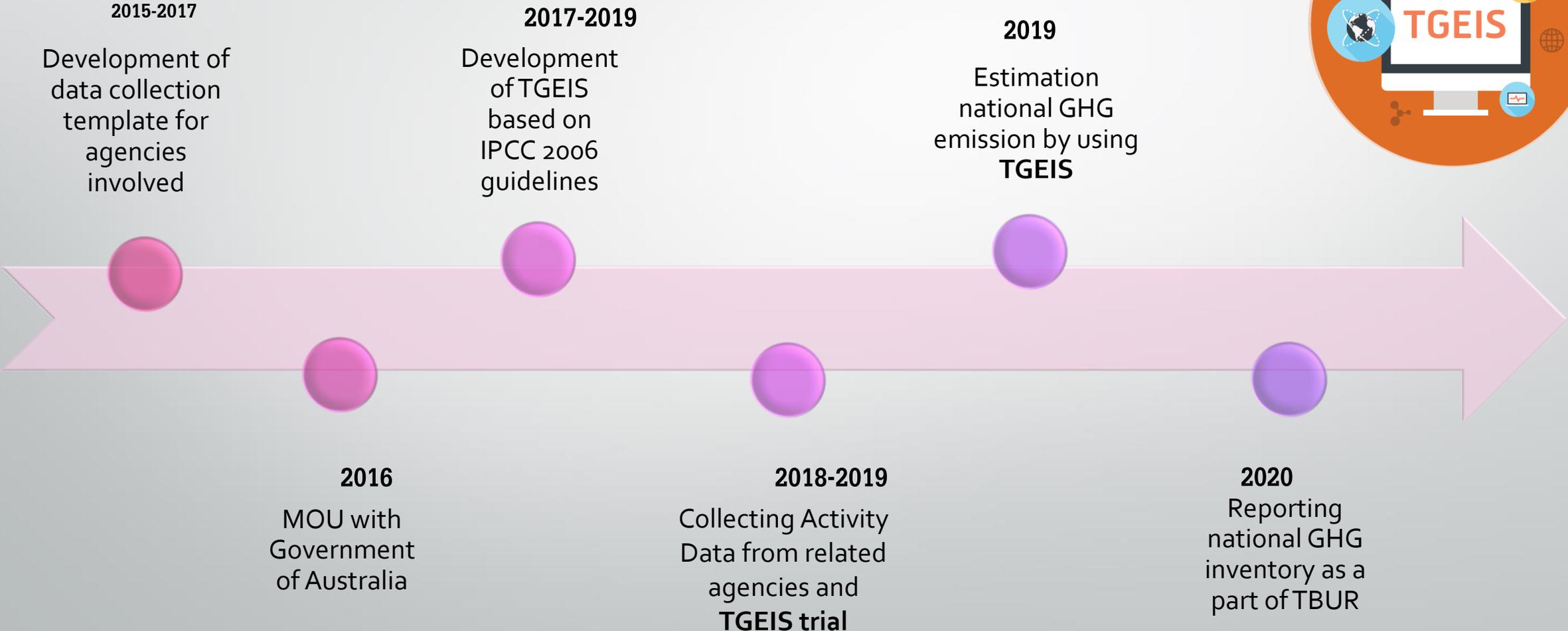


5. Challenge

- ❖ Transition to the 2006 IPCC Guidelines for National GHG Inventories in all sectors and enhancing the capacities of national staff involved in the inventory process.
- ❖ Move to higher tier particularly for key categories sub-sector.
- ❖ Collecting data from private sector, currently there are no regulations.
- ❖ Improving data collection and methodology for F-GAS and LULUCF sector.

Next Step

Transitional processes for using IPCC 2006 methodology in Thailand





Thank you

**Climate Change Management and Coordination Division
Office of Natural Resources and Environmental Policy and Planning
Ministry of Natural Resources and Environment**

Rama VI Rd. Praya-Thai district, Bangkok 10400 Thailand

E-mail: unfccc.thailand.focalpoint@gmail.com

<http://climate.onep.go.th>