



United Nations Climate Change



# Sectoral **A**ctivity data for Greenhouse gas **E**missions calculations (**SAGE**)

## ***IPPU sector***

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# Purpose of SAGE

- SAGE is a greenhouse gas inventory **data collection tool to support national climate measurement, reporting, and verification (MRV) systems**, especially in developing countries, through robust data collection, intelligent processing, and storage.
- SAGE is fully compatible with the 2006 IPCC guidelines for national greenhouse gas inventories and was developed to support governments in collecting activity data to ultimately meet the reporting requirements under the Enhanced Transparency Framework of the Paris Agreement.

# Key features of SAGE

SAGE provides an intuitive and user-friendly interface for collecting and documenting data to achieve transparent, accurate, consistent, comparable, and complete GHG inventories. Key features include:

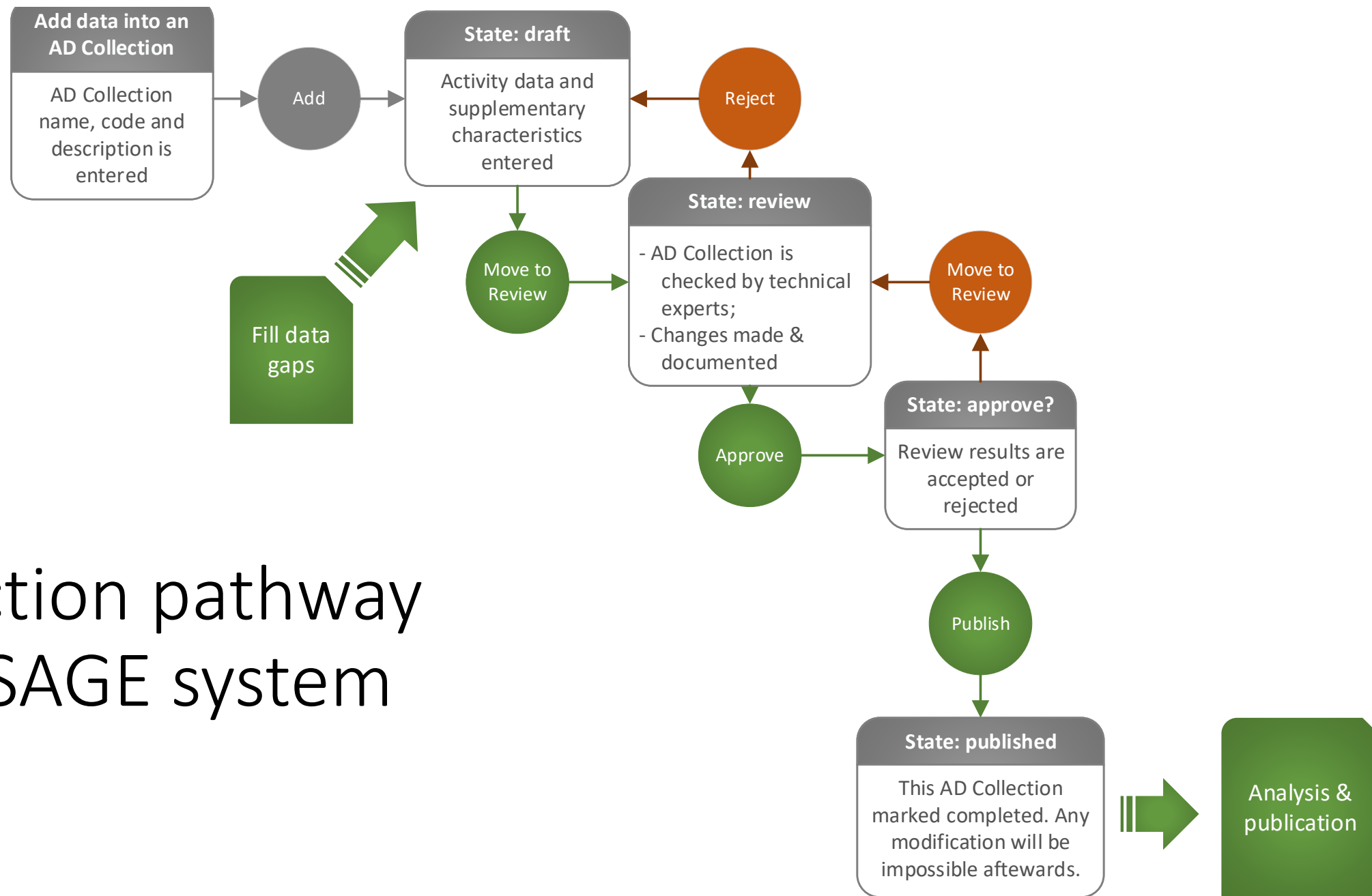
- Flexible configuration that allows tailoring the application to specific country conditions, in particular:
  - Set of categories used
  - Set of measurement units
  - Set of gases used and their parameters
  - Settings for banks calculation (IPPU)
  - Airports (Energy) – and more
- Multiple ways to enter AD records:
  - Manual
  - Through Export/Import
  - Copy existing
- Rich metadata associated with every important value within configuration or AD records:
  - Source (institution issuer) and Date issued
  - Type of information source (actual data from a survey, modelled data, etc.)
  - Data description /reference
  - Edition log

# And more features:

- Tracking of any important changes in SAGE data:
  - Collections creation, stage, change, removal, and more
  - AD editions
  - Configuration editions
  - Submission, approval, etc. processes
- “360 degrees” AD views via:
  - Generic lists and view/edit forms per category/tier
  - Analytics module
  - Gaps module
  - AD/Collection Explorer features
  - AD/Collection Compare features
  - “Change existing” and “Add missing” global AD views
  - Simple CSV AD exports
- Embedded logic for AD Collection staging: creation, review, approval, and final submission
- Generic interface across all application areas
- Data protection against mistakes

# Energy → IPPU

- Preserved the philosophy and the key principles of SAGE
- Retained the functional blocks, but reconfigured them substantially to accept and process the IPPU data
- Created a seamless switch between the Energy and the IPPU sector at the dashboard level
- Included ALL IPPU categories listed in the IPCC GLs and reframed the category table to enable mapping IPCC and UNFCCC categories
- Created a new sectoral subset of the database to handle the IPPU sector data and metadata
- Included IPPU-specific calculations (e.g., bank calculations for fluorinated gases)



# AD collection pathway through SAGE system



Global navigation links for a quick switch between components (visible in each screen)

Navigation links for the currently selected functional component

Sectors

- 1. Energy
- 2. IPPU

Open

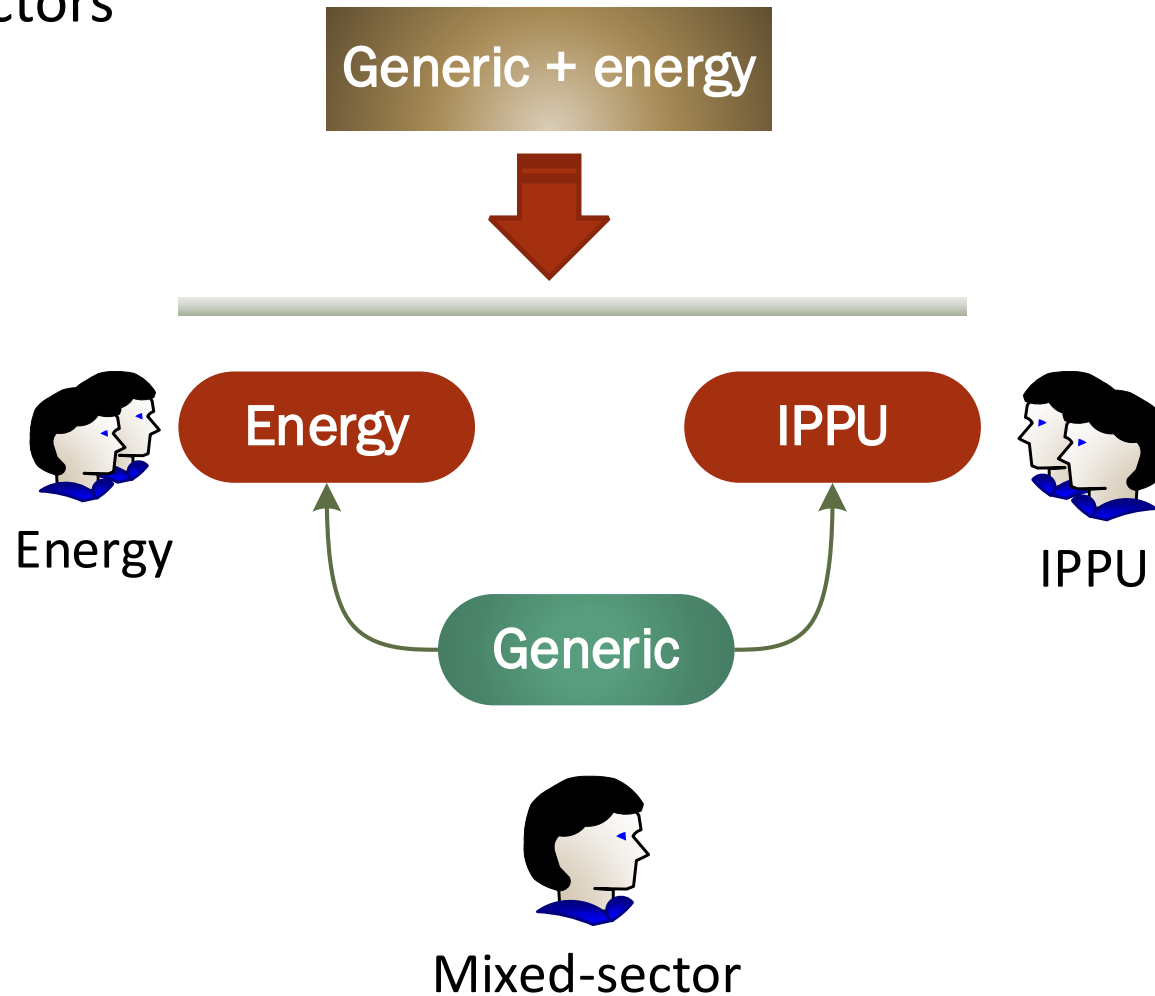
- Administration
- Configuration - Basic
- Configuration - IPPU sector
- AD Collections
- Analytic
- Data Gaps

Functional components in SAGE

# Welcome to SAGE

# Changes by component - administration

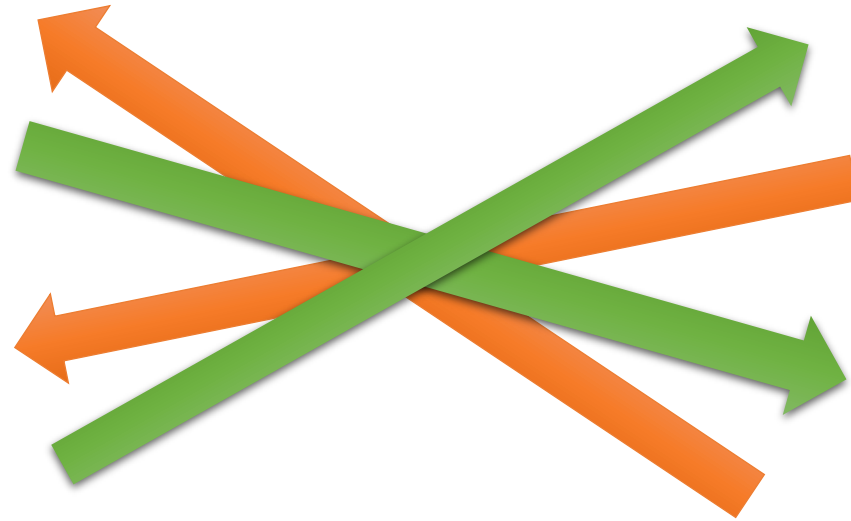
- **Administrative:** the same look and feel, but there are substantial machinery changes; now permissions cover Energy and IPPU sectors and separate user groups can be created for these sectors





# Changes by component - configuration

- The configuration layer is split into generic, energy, and IPPU.
- Generic tables are available in both sectors' forms
- New IPPU tables are prototyped and implemented
- Because there were significant inconsistencies for IPCC-UNFCCC categories, new attributes were designed and implemented to harmonize and maintain 1:1 mapping between the two category lists.



# Changes by component – AD Collections

- All IPPU categories were included in the IPPU sectoral module
- A structured hierarchy, better supported by the entry forms is created (supported by the programming modules)
- A new set “GHG” was created covering all IPPU categories and gases to describe GHG capture and storage due to similarities of the attributes required by the IPCC for recording these activities across the sector
- A uniformed algorithm has been introduced to process user-specified ‘Other’ categories across the sector
- The interface has been simplified and unified (the same view for the Energy and the IPPU sectors)
- Blend calculator is embedded to identify the amount of individual chemicals in commercial refrigeration blends.
- The algorithms for calculating outputs in complicated cases (e.g., cement production, accounting for banks) have been implemented



# AD entry

**Using SAGE form, recommended for a single year or for small corrections:**

Create the AD collection

Go to relevant category group

Use ADD option

Fill in the form

Add

**Using Excel template, recommended for a time-series:**

Create the AD collection

Go to relevant category group

Download the template

Fill in the template for the time series

Upload the file to SAGE

**Using the previous time-series AD Collection, recommended for editing time-series:**

Create the AD collection

Go to existing AD collection that you want to use as a base

Export selected AD Collection

Modify exported data as required

Upload the file to SAGE

# Changes by component – Analytic

- The application-based filters have been designed and added to the category selection process to enable more precise analyses of activity data within each category
- The existing functions were modified to accommodate specifics of the IPPU sector while keeping the key features introduced in the Energy sector:
  - The analytical procedures in the IPPU module are now operated strictly at the category/subcategory level to reflect the variety of products and processes in the IPPU sector

GHG 2.A ▾ 2.B ▾ 2.C ▾ 2.D ▾ 2.E ▾ 2.F ▾ 2.G ▾ 2.H ▾

Data categories:

all  type in

2

2.C

2.C.1 Iron and Steel Production

2.C.1/other Other

2.C.1/pellet Pellet

2.C.1/pig-iron Pig Iron

2.C.1/reduced-iron Direct reduced iron

2.C.1/sinter Sinter

2.C.1/steel Steel

Time-series AD collection:  
IPPU\_1\_2016-2020 ▾

Sum sub-categories:

Years:  
2016,2020

# Data Gaps

- The key features of the data gaps analysis have been retained in the IPPU module.
- The application-based filters have been designed and added to the category selection process to enable more precise analyses of activity data within each category

Find - 2.B.4 T1

GHG 2.A ▾ 2.B ▾ 2.C ▾ 2.D ▾ 2.E ▾ 2.F ▾ 2.G ▾ 2.H ▾ Info Modeling log

Data categories: (all) ▾

all  type in  pick  none Clear

- 2
  - B
    - 2.B.4 Caprolactam, Glyoxal and Glyoxylic Acid Production
    - 2.B.4/caprolactam Caprolactam, Glyoxal and Glyoxylic Acid Production
    - 2.B.4/glyoxal Caprolactam, Glyoxal and Glyoxylic Acid Production
    - 2.B.4/glyoxylic acid Caprolactam, Glyoxal and Glyoxylic Acid Production

*Time-series AD collection:*  
IPPU\_1\_2016-2020 ▾

*Year(s):*  
2016-2020

# And now – let's go to the live tool

## Welcome to **SAGE** Tool site

*Sectoral **A**ctivity data for **G**reenhouse gas **E**missions calculations (SAGE) is a data collection tool for GHG inventories*

### Purpose

SAGE is a greenhouse gas inventory data collection tool to support national climate measurement, reporting, and verification (MRV) systems, especially in developing countries, through robust data collection, intelligent processing, and storage.

SAGE is fully compatible with the 2006 IPCC guidelines for national greenhouse gas inventories and was developed to support governments in collecting activity data to ultimately meet the reporting requirements under the Enhanced Transparency Framework of the Paris Agreement.

### Features

SAGE provides an intuitive and user-friendly interface for collecting and documenting data to achieve transparent, accurate, consistent, comparable, and complete GHG inventories.

Key features include:

- Conveniently record data in the database with basic data validation
- Collate activity data, keep track of data origins and uncertainties
- Flexible selection options for entering fuels, technologies, etc. - they can be tailored to reflect national circumstances
- Support decision making on selecting optimal strategies for dealing with data gaps
- Enable data comparisons and time series analysis
- Enable data review and approval process

### Sign up

Become part of the UNFCCC program of tracking and estimation GHG emissions!

[Contact us](#) to open SAGE account

[Video tour of SAGE](#)

**SAGE helps saving our planet!**

