I explore the GHG Tool and I create a new scenario

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What am I going to learn?

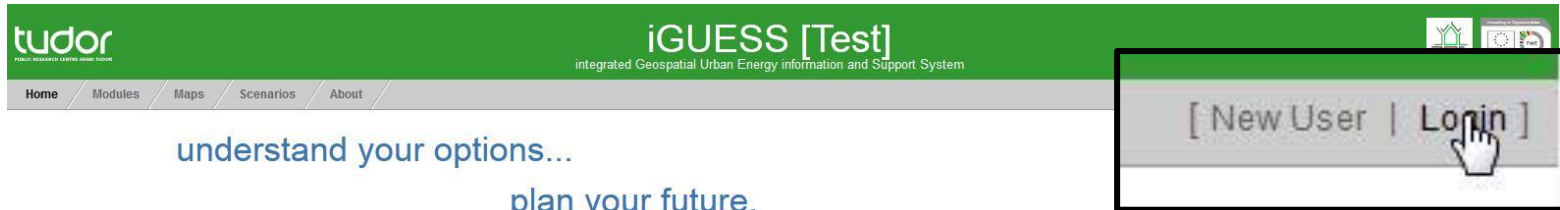Understand the working methodology
of the Scenario tool

Understand how I insert new data in the Scenario tool
and how can I create a new energy
and emissions scenario.

This training module should be used after the "I register as a new user in iGUESS" training is completed

1 I open iGUESS Platform and login.

1

1 I open the Scenarios Tab from the iGUESS Platform by clicking in the corresponding icon.

1

1 I open a New Scenario.

1 New Scenario

2 I fill the start information. (**Please use unique names for the scenarios**)

2

Scenario Name	Ghent base scenario
Base Year	2009
Time step (years)	10

In this example the base year is 2009, the number of time steps is just 3 and the length of each time step is 10 years. So the last year will be 2029.

3 I click on Create New Scenario

3 Create New Scenario

1 I choose the correct length of my scenario by adding or removing periods

1 Add period

Remove period

2 I fill the basic data for this scenario*

2

Sector	Demand Growth (%/yr)	Efficiency Gain (%/yr)	Total Demand (GWh)
Tertiary	1.0	1.5	2222.0
Rail Transport	0.0	2.0	65.0
Agriculture	1.0	1.5	40.0
Industry	1.3	-1.3	24507.0
Navigation Transport	1.0	0.5	203.0
Residential	1.0	1.6	2369.0
Road Transport	1.0	1.0	1401.0

This information will be already prefilled by default in the future.

1 **2** I scroll down and fill in the Energy Production Tables* with values for Electricity and District Heating from the different sources (in %) for the remaining years of the scenario.

Energy Production (%)

1

	Electricity			District Heating										

Period	Coal	Gas	CHP	Crude Oil	Biogas	Waste	Imports	Other Fossil	Geothermal	Hydraulic	Solar	Wind	Wood	Other renewables	Total
2009	0.0	73.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.67	0.06	0.77	0.0	0.0	100.00
2019	0.0	69.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.1	0.09	1.04	0.0	0.0	100.00
2029	0.0	64.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.52	0.17	1.5	0.0	0.0	100.00

Change between tabs from Electricity to Heat.

Energy Production (%)

2

	Electricity		District Heating									

Period	Coal	Gas	CHP	Crude Oil	Biogas	Excess Heat	Waste	Imports	Other Fossil	Geothermal	Solar	Wood	Total
2009	0.0	99.88	0.0	0.0	0.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.00
2019	0.0	99.66	0.0	0.0	0.28	0.0	0.0	0.0	0.0	0.0	0.0	0.05	99.99
2029	0.0	99.29	0.0	0.0	0.46	0.0	0.15	0.0	0.0	0.0	0.0	0.11	100.01

* Base year should be already prefilled by default in the future.

1 I scroll down and fill in the Energy Consumption Tables with values of consumption for the different sources for all the sectors (in %).

1

Energy Consumption per Sector (%)

| | Tertiary | | Rail Transport | | Agriculture | | Industry | | Navigation Transport | | Residential | | Road Transport | |

Period	Coal	Gas	CHP	Crude Oil	Diesel	Gasoline	LPG	Biogas	District Heating	Electricity	Other Fossil	Geothermal	Wood	Other renewables	Total
2009	0.0	45.0	0.0	0.5	8.95	0.05	0.41	0.0	7.4	37.5	0.0	0.0	0.19	0.0	100.00
2019	0.0	44.55	0.0	0.5	8.99	0.05	0.42	0.0	7.4	37.5	0.0	0.0	0.13	0.0	99.54
2029	0.0	44.2	0.0	0.51	9.08	0.05	0.42	0.0	7.46	37.9	0.0	0.0	0.13	0.0	99.75

Rail Transport

Agriculture

Industry

Navigation Transport

Residential

Road Transport

Change between tabs to set the data for all the sectors.

(1) I scroll down to verify that the emission factors filled by default are correct for my scenario. Otherwise, expert mode is needed to change the values.

(1)

Emission Factors

CO2 (t/MWh)	CH4 (g/MWh)	N2O (g/MWh)

| Period	Coal	Gas	CHP	Crude Oil	Diesel	Gasoline	LPG	Biogas	Excess Heat	Waste	Imports	Other Fossil	Geothermal	Hydraulic	Solar	Wind	Wood	Other renewables
2009	0.341	0.266	0.0	0.263	0.266	0.249	0.227	0.196	0.0	0.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.341	0.266	0.0	0.263	0.266	0.249	0.227	0.196	0.0	0.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2029	0.341	0.266	0.0	0.263	0.266	0.249	0.227	0.196	0.0	0.33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

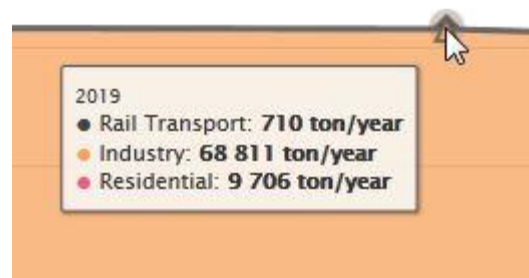CH4 (g/MWh)

N2O (g/MWh)

Verify the units!

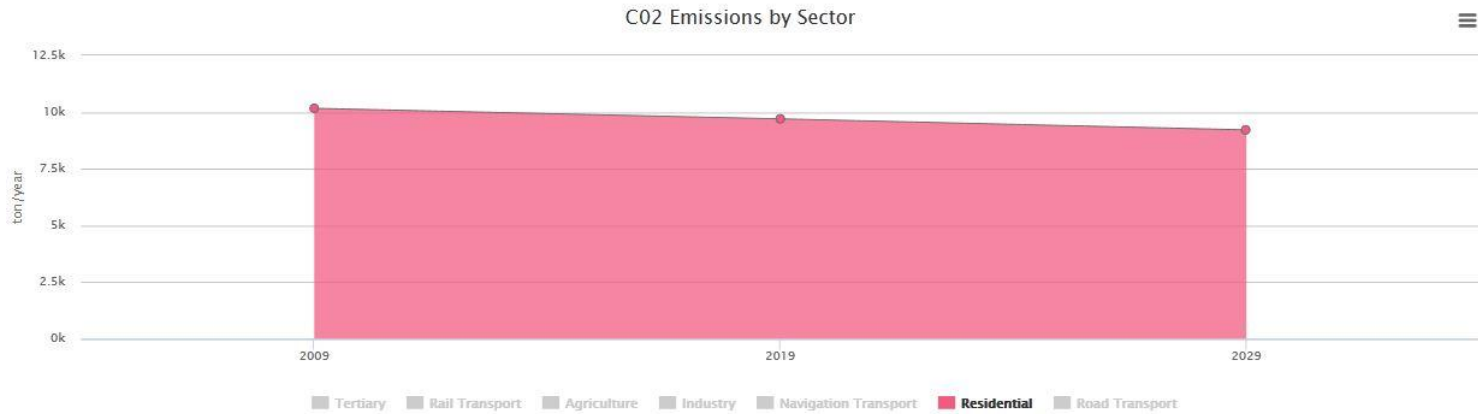**1** I scroll down and verify the emission results in the charts
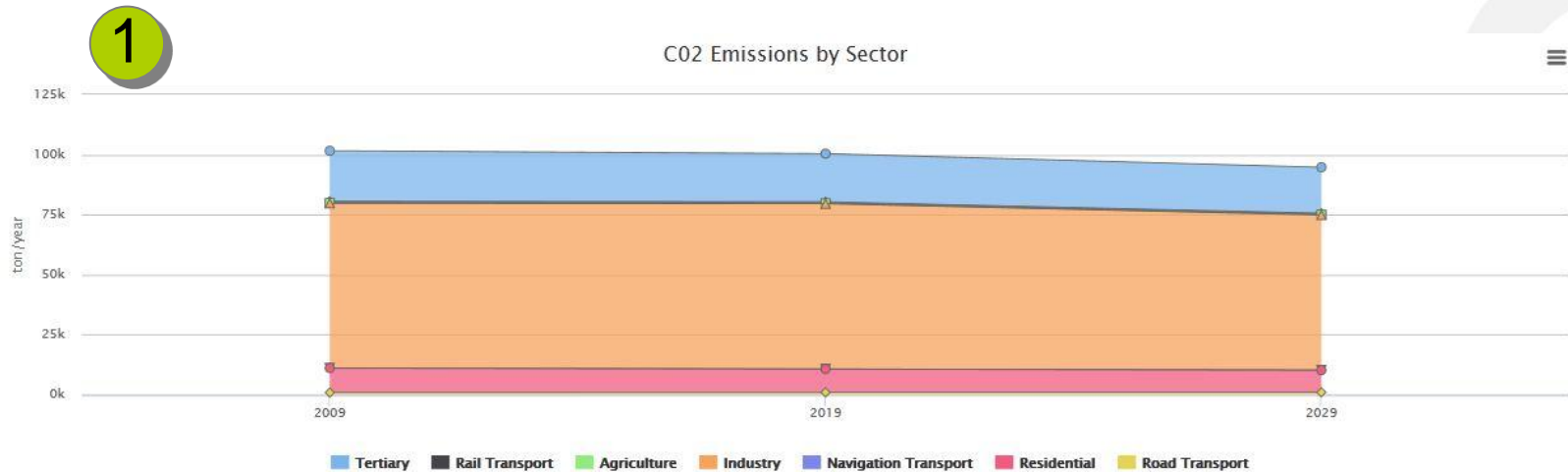
2 I have the possibility to check the results for a given time step

1 I have the possibility to check the results for a selection of sectors by clicking in the bar bellow the chart **2**

1

CO2 Emissions by Sector

Tertiary　　Rail Transport　　Agriculture　　Industry　　Navigation Transport　　**Residential**　　Road Transport

2

Tertiary　　**Rail Transport**　　Agriculture　　**Industry**　　Navigation Transport　　**Residential**　　Road Transport

Scenario is Complete!

(1) I scroll up and click in Update Scenario to save the current scenario and return to the scenarios list

Ghent base scenario

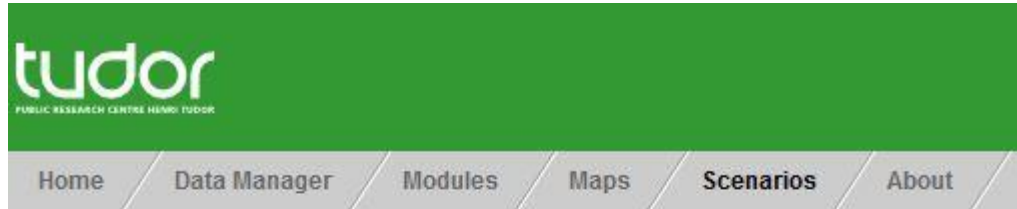|	
Scenario Name	Ghent base scenario
Base Year	2009
Time step (years)	10

(1) Update Scenario

Add period

Remove period

1 I have the possibility to start a new scenario, with all the information of a previous scenario by clicking duplicate in the scenarios list

1

I make the effort to put the most interesting measures in practice!!!!

1 I create different scenarios using the same procedure!

2 I define different ambitions regarding Renewable Energies, Energy Efficiency and Energy Saving measures!

3 I evaluate and compare the scenarios for emissions and energy!

Future features

1 Automatic pie charts regarding energy mix for Production and Consumption

2 Automatic chart of energy results for the scenario

3 Button to export the resulting tables

4 Link with the already calculated renewable potentials for every city

5 Compare scenarios options