

EBS & MAED

Hands-on 4: Setting Up the Structure Part I

Learning outcomes

By the end of this exercise, you will be able to:

- 1. Manage Case Studies in MAED-D
- 2. Declare Definitions of a Case Study
- 3. Navigate the Main Menu in MAED-D
- 4. Add New Years in the Study Period

Activity 1: Manage Case Studies in MAED-D

In this hands-on session, you will familiarize yourself with the operation of the MAED-D model. You will practise managing case studies and declaring the definitions of a case study. To participate in this training session, you must have already installed the MAED software on your computer. During the session, you will be shown how to proceed through the successive steps of model building. You should replicate each step on your own computer.

The previous version of MAED was two workbooks in EXCEL. All the information required for the simulation, as well as its results, were presented in different worksheets. Problems sometimes arose with security levels or certain computer configurations that did not allow the model to run. A new version of MAED has now been developed as a Web-based platform. This adapts the software to current computer trends.

Each time MAED is started, the first screen allows you to choose the model in which you are going to work: MAED-D, for the analysis of the energy demand or MAED-EL, for the analysis of electricity demand curves.

In the following few hands-on exercises, we will learn how to use the first one, MAED-D. We will work with MAED-EL in the next part of the course.

To start, we click on MAED-D from the main menu as shown below:

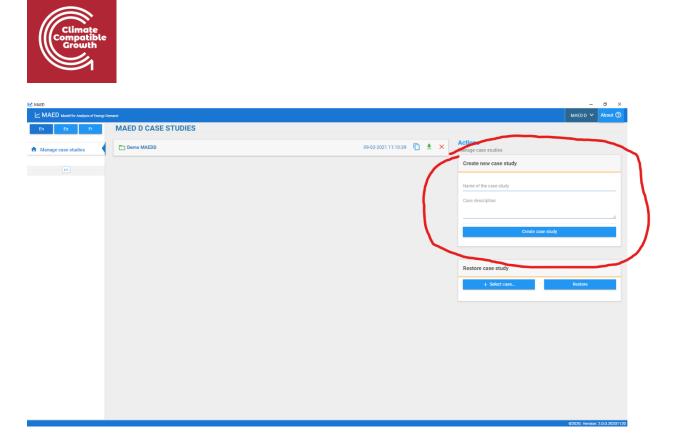


MAED Model for Analysis of Energy	Demand	
En Es Fr		MAED D
		MAED EL
Manage case studies		
Ø	Planning and Economic Studies Section Division of Nuclear Power Department of Nuclear Energy International Atomic Energy Agency	
		@2020. Version: 2.0.0.20201120

This will bring you to the menu to handle cases in MAED. This menu is shown below:

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En Es Fr	MAED D CASE STUDIES	
✿ Manage case studies	Demo MAEDD	09-02-2021 11:10:39 D 🛓 🗙 Actions Manage case studies
	Demo MAEDD 1	09-02-2021 15:41:06 📋 🛓 🗙
		Name of the case study
		Case description
		Cireate case study
		Restore case study
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		\$7020. Version: 2.0.0.20201

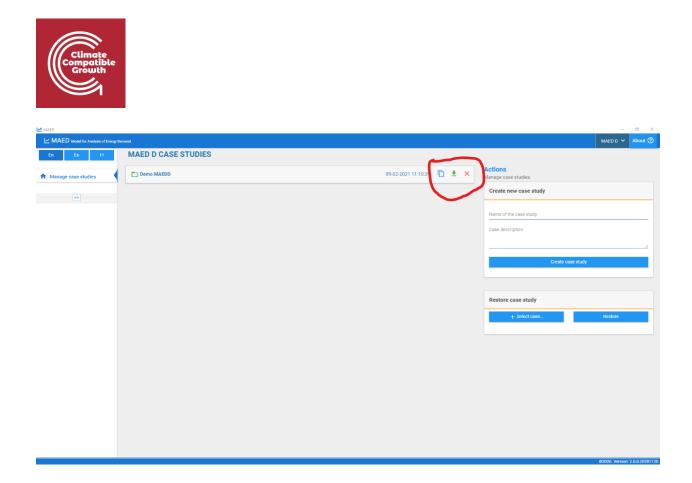
As highlighted below, the block on the right shows options for creating a new case study. The options to restore other case studies are in the block just below that:



The cases that currently exit in the data subdirectories of MAED are listed in the middle:

MAED					-	d ×
MAED Model for Analysis of Energy D	mand				MAED D 🗸	About ⑦
En Es Fr	MAES D CASE STUDIES					
✿ Manage case studies	Demo MAEDD	09-02-2021 11:10:39	⊡ ± ×	Actions Manage case studies		
				Create new case study		
				Name of the case study		
				Case description		
				Create case study		_
				Restore case study		
				+ Select case	Restore	
					©2020. Version	2.0.0.20201120

You can manage an existing case using the buttons on the right of the case name. You can copy, make a backup, or delete the case.



To take a quick tour of the model, and to have a look at some different internal menus, let us enter the case, Demo MAEDD. Just click on its name to enter the case.

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✿ Manage case studies	Demo MAEDD	c	09-02-2021 11:10:39	Ē ≛ ×	Actions Manage case studies		
	$\overline{\mathbf{\Lambda}}$				Create new case study		
	l l				Name of the case study		
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					Create case study		
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					+ Select case	Restore	
						©2020. Version	r: 2.0.0.20201120

The programme takes you to the General Information page. Note that the General Information tab is highlighted in the navigation menu. This indicates that you are currently on the General Information page.



MAED			- a ×
MAED Model for Analysis of Energy Der	nerd		MAED D 🗸 About 🕐
En Es Fr	General information Name of the case study Demo MAEDD		
♠ Manage case studies	Definitions (name, years, description)	Units	8
General information	Name of the case study Demo MAEDD	Population Thousand Million	
→ Energy intensities ~	Years 2010,2015,2020,2025,2030,2035,2040,2045,2050	GDP Million [10 ⁴] Dillion [10 ⁴] US Dollar	•
Transport	Case description The data used in this demonstration case correspond to a hypothetical scenario for a hypothetical country. They are there only for illustration purposes and will need to be replaced by actual country and scenario specific data by	Transport Pessenger (pkm) Million [10*] Billion [10*] Trillion [10*4]	
Services	They are there only for illustration purposes and will need to be replaced by actual country and scenario specific data by the user of the model.	Transport Freight (Brm) Million [10 ⁴] Billion [10 ⁴] Trillion [10 ¹⁴]	
Calculate		Energy unit GWyr PJ Tcal Mtoe O GBTU	
	<i>M</i>		
	Sectors & Clients		8
	Agriculture Construction Mining Manufacturing Energy Service Household Transport		
	0	Specific Electricity Thermal use Motiv use	
	Farming	0 0 1	2
			\$2020. Version: 2.0.0.20201120

We will be making some changes in the structure of the model to demonstrate the functionality of the software. Since we do not want to damage the case we have now, we will work on a copy of it. We must go to the Case Studies Management menu. To do so, we click on the button, Manage Case Studies, in the navigation menu.

	Name of the case study Demo MAEDD									
Manage case studies	Definitions (name, years, descriptio	1)	8	Units						
General information Social economic data	Name of the case study Demo MAEDD			Population Thousand	Million					
Energy intensities				GDP	•					
ndustry	Years 2010,2015,2020,2025,2030,2035,2040,204	5,2050		Million [10]	O Billion [10*]	O Trillion [10)" ²]	US Do	llar	
Fransport	Case description	orrespond to a hypothetical scenario for a hypothetica	lt	Transport Pessenger	r (pkm)	Trillion [10])'2]			
lousehold		and will need to be replaced by actual country and sc		Transport Freight (tk	m)					
ervices	all der of the model.			Million [104]		O Trillion [10)*2]			
Calculate				Energy unit	PJ 🔿 Tcal	O Mtoe	GBTU			
Results			6	<u> </u>	•••••	0	0			
	Sectors & Clients									
	Agriculture Construction Minir	g Manufacturing Energy Service H	lousehold Transport							
	H						Specific Electricity use		Motive Power	
	Farming						~	~	~	



We need to copy the case: Demo MAEDD. To do so, we simply click on the copy button to the right of the case name.

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En Es Fr	MAED D CASE STUDIES		
↑ Manage case studies	Demo MAEDD	09-02-2021 11:10:39 D + × Actions Manage case studies	
		Create new case study	
		Name of the case study	
		Case description	
		c	reate case study
		Restore case study	
		+ Select case	Restore
		+ Seed date	Restore
			\$2020. Version: 2.0.0.20201120

A new case should now appear underneath the original Demo MAEDD. Note that by default, this case has the same name as the original, but with an extra "-copy". We will learn how to change that later.

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En Es Fr	MAED D CASE STUDIES				
✿ Manage case studies	Demo MAEDD		Actions Manage case studies		
	🕞 Demo MAEDD - Copy	09-02-2021 15:41:06 📋 🛓 🗙	Create new case study		
			Name of the case study		_
			Case description		
			Create case study		
			Restore case study		
			+ Select case	Restore	
				00000.01	
				@2020. Version: 2.0.0.	20201120

Congratulation, you can now manage cases in MAED-D.



Activity 2: Declare Definitions of a Case Study

The start menu of MAED-D should now show the case that we copied in the previous activity. To enter the case, simply click on its name (it should be called Demo MAEDD - Copy).

This should bring you to the General Information page. This page contains the Case Study Definitions. The case definitions include the name of the case, the years of the study, and a description of the study, as can be seen below:

MAED Model for Analysis of Energ	y Demand		MAED D V About ?
En Es Fr	General information		
Manage case studies	Definitions (name, years, description)	Units	8
General information	Name of the case study	Population	
Social economic data	Demo MAEDD	O Thousand O Million	
 Energy intensities Industry 	Years 2010,2015,2020,2025,2030,2035,2040,2045,2050	ODP Million [10"] O Billion [10"] US Dollar	Ŧ
Transport	Case description The data used in this demonstration case correspond to a hypothetical scenario for a hypothetical country.	Transport Pessenger (pkm) Million [10*] Billion [10*] Trillion [10*4]	
Household Services	They are there only for illustration purposes and will need to be replaced by actual country and scenario specific data by the user of the model.		
Calculate		Energy unit G GWyr PJ Tcal Mtoe GBTU	
Results			
\leftrightarrow			
	Sectors & Clients		8
	Agriculture Construction Mining Manufacturing Energy Service Household Transport		
	•	Specific Motiv Electricity Thermal use Power use	
	Farming	🛛 🗠 🖻	1

Note that the name of the copy of the study is the same as the original case study. Click on the Name of case study box and change "Demo MAEDD" to "Demo MAEDD 1". After changing the name click the save button on the right to save the changes. Remember to click save whenever you make any changes to your cases.



			AED D V About (
MAED Model for Analysis of Energy I	General information Name of the case study Demo MAEDD		MAED D V About (
Manage case studies	Definitions (name, years, description)	Units	8
General information	Name of the case study	Population	
Social economic data	Demo MAEDD 1	O Thousand O Million	
Energy intensities ~	Years 2010,2015,2020,2025,2030,2035,2040,2045,2050	GDP Image: Second	٣
Transport	Case description The data used in this demonstration case correspond to a hypothetical scenario for a hypothetical country.	Transport Pessenger (pkm) Million [10"] Trillion [10"]	
Household Services	They are there only for illustration purposes and will need to be replaced by actual country and scenario specific data by the user of the model.	Transport Freight (tkm) O Million [10 ⁴] Billion [10 ⁴] Trillion [10 ¹⁴]	
Calculate		Energy unit G GWyr PJ Tcal Mtoe GBTU	
I Results	<i>h</i>		
↔			
	Sectors & Clients		8
	Agriculture Construction Mining Manufacturing Energy Service Household Transport		
	0	Specific Electricity Thermal use Power use	
	Farming	0 0 0	

The units used for population, GDP, Transport Passenger, Transport Freight, and Energy can be selected in the block at the right of the definitions block. Remember to click the save button if you make changes to the units of the study. This will update all corresponding tables in MAED-D automatically.

	Name of the case study Demo MAEDD 1		-
e case studies	Definitions (name, years, description)	Units	
information	Name of the case study	Population	_
conomic data	Demo MAEDD 1	O Thousand O Million	
ntensities ~	Years	GDP Million [10⁴] Billion [10⁴] Trillion [10¹⁴] US Dollar 	
	2010,2015,2020,2025,2030,2035,2040,2045,2050	US DOILAR	
t	Case description The data used in this demonstration case correspond to a hypothetical scenario for a hypothetical country.	Transport Pessenger (pkm) Million [10 ⁹] Billion [10 ⁹] Trillion [10 ¹²]	
d	They are there only for illustration purposes and will need to be replaced by actual country and scenario specific data by the user of the model.	Transport Freight (tkm)	
	the user of the model.	Million [10 ⁹] Billion [10 ⁹] Trillion [10 ¹²]	
e		Energy unit G GWyr O PJ O Tcal O Mtoe O GBTU	
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	Sectors & Clients		
	Agriculture Construction Mining Manufacturing Energy Service Household Transport		_
	Agriculture construction mining manufacturing energy service Housenoid transport		
		Specific Electricity Thermal use Motive	
	-	use Power	
	Farming		

Congratulations, you can now declare the definitions of a case study.



# Activity 3: Navigate the Main Menu in MAED-D

We shall now try navigating the main menu of MAED-D. The menu to navigate different pages of MAED-D is located on the block on the left.

MAED			– ø ×
MAED Model for Analysis of Energy De	nand	MAR	ED D 🗸 About 🕐
En Es Fr	General information Name of the case study Demo MAEDD 1		
Manage case studies	Definitions (name, years, description)	Units	8
General information	Name of the case study	Population	
Social economic data	Demo MAEDD 1	Thousand Nillion	
→ ⁺ Energy intensities [•]	Years 2010,2015,2020,2025,2030,2035,2040,2045,2050	GDP         Image: Second	*
- Transport	Case description The data used in this demonstration case correspond to a hypothetical scenario for a hypothetical country.	Transport Pessenger (pkm)           Million [10 ⁴ ]           Billion [10 ⁴ ]	
- Household - Services	They are there only for illustration purposes and will need to be replaced by actual country and scenario specific data by the user of the model.	Transport Freight (km)           Million [10 ⁴ ]           Billion [10 ⁴ ]	
Calculate		Energy unit G GWyr O PJ O Tcal O Mtoe O GBTU	
II Results	<i>hhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhh</i> _ <i>h</i>		
	Sectors & Clients		8
	Agriculture Construction Mining Manufacturing Energy Service Household Transport		
	•	Specific Electricity Thermal use Power use	
	Farming	000	
			0 Version: 2.0.0.20201120

At this point we recommend you go to the programme to explore the various pages available by clicking on their names in the navigation menu. To return to the previous menu, simply click on the General information tab.

At this moment, Structure Definitions are active. These will generate the structure of the model to be used to analyse the demand for the country or the region being studied. The other tabs will enable tables for the input of the technical data of your model.

For example, when you click on social economic data a new page is enabled to introduce demographic and economic data. Let us see, for example, what the demographic data that the programme asks for. To go to the demographic data tab, click on the Social economic data tab in the menu.

	Social economic data							MAED D 🗸 Abou
Manage case studies	Name of the case study Demo MAEDD Demography GDP							
General information								
Social economic data	Demography							du   <   >   👱   🖻   (
Energy intensities 🗸 🗸	Item	Unit	2010	2015	2020	2025	Chart	
Industry	Population *	Million	24.27539	26.93364	29.59143	32.19368		
	Population growth rate *	% per annum		2.10000	1.90000	1.70000		
Transport	Urban Population	%	43.00000	44.00000	45.00000	45.00000		
Household	Person/ urban Household	cap	5.70000	5.40000	5.00000	4.50000		
Services	Number of urban Households	Million	1.83130	2.19459	2.66323	3.21937		
Calculate	Rural Population	%						
	Person/ rural Household	cap						
Results	Number of rural Households	Million						
	Potential Labour Force	%	49.40000	49.55000	49.65000	49.70000		
	Participating Labour Force	%	45.00000	49.00000	54.00000	60.00000		
	Active Labour Force	Million	5.39642	6.53935	7.93376	9.60016		
	Population in cities with public transp	%	24.00000	25.00000	26.00000	27.00000		
	Population inside Large Cities	Million	5.82609	6.73341	7.69377	8.69229		

This is the table for entering demographic data. The shaded cells are results of calculations made by the programme. Shaded cells are blocked from editing. The other cells are available for entering numeric values.

	Social economic data Name of the case study Demo MAEDD									
Manage case studies	Demography GDP									
General information										
Social economic data	Demography							di 🔸	>   ≛	0
Energy intensities ✓	Item	Unit	2010	2015	2020	2025	Chart			
- Industry	Population *	Million	24.2753	26.93364	29.59143	32.19368				
	Population growth rate *	% per annum	-	2.10000	1.90000	1.70000				
Transport	Urban Population	%	43.00000	44.00000	45.00000	45.00000				
Household	Person/ urban Household	cap	5.70000	5.40000	5.00000	4.50000				
Services	Number of urban Households	Million	1.83130	2.19459	2.66323	3.21937				
	Rural Population	%								
Calculate	Person/ rural Household	cap								
II Results	Number of rural Households	Million								
↔	Potential Labour Force	%	49.40000	49.55000	49.65000	49.70000				
(*)	Participating Labour Force	%	45.00000	49.00000	54.00000	60.00000				
	Active Labour Force	Million	5.39642	6.53935	7.93376	9.60016				
	Population in cities with public transp	%	24.00000	25.00000	26.00000	27.00000				
	Population inside Large Cities	Million	5.82609	6.73341	7.69377	8.69229				

Congratulations, you can now navigate the main menu in MAED-D.



## Activity 4: Add New Years in the Study Period

In this activity we shall add more years to the study period of a case study.

The study period of the Demo MAEDD 1 case contains the years 2010, 2015, 2020, and 2025. All tables in MAED-D have these years. Let us confirm it by looking at a couple of them: the demographic data and the energy intensities of motive power. Click on the Social economic data tab in the main menu to access the demography page.

Monogr case studies General Information	En Es Fr	Name of the case study Demo MAEDD 1							MAFD D 🗸 About
General allomation         Concorrection         (a) (C) 2 (C)	Manage case studies								
North Stronger         Name         Unit         2016         2016         2020         2021         Name           Inclusion         Populatini         Million         421/3         20.005         2.020         2025         Inar           Inclusion         Populatini         Million         421/3         20.005         2.020         2025         Inar           Inaugodi         Populatini         Million         421/3         20.000         1.0000         Inar         Inar         Inar         2.01000         1.0000         Inar         Inar         Inar         Inar         Inar         Inar         Inar         2.01000         1.0000         Inar         Inar <tdi< th=""><th>General information</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></tdi<>	General information								
Bergy Intensities Industry         Imm         Umit         2007         2018         2022         2021         Part Intensities           Transport         Population **         Million         21/259         28/3288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/4288         28/42888         28/42888         28/42888 <th>Social economic data</th> <th>Demography</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>ılı &lt; &gt; 👱 🗃 🦁</th>	Social economic data	Demography							ılı < > 👱 🗃 🦁
Indiany     Produktion 's we arrow 's we		item	Unit	2010	2015	2020	2025	Chart	
Integration         Production (name)         New Hermannia         Q         20000         100000         1           Hausschall         Proprior (name)         Nis         40.0000         40.0000         40.0000         40.0000         1           Sentors         Proprior (name)         Nis         5.40000         5.00000         5.00000         1           Calculate         Proprior (name)         Million         6.32000         2.10400         1         1           Calculate         Proprior (name)         Million         6.32000         4.50000         1         1         1           Calculate         Proprior (name)         Million         6.32000         4.50000         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1							001000		
Numbrief         Utility Propulation         N         41.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         44.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.0000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45.000         45		Population growth rate *	% per annum		2.10000	1.90000	1.70000		
Sentors         Numeric of unan Households         Mailon         0.4000         0.4000         0.4000         0.4000           Galaxie         Rural Ropulation         No         0.4000         0.4000         0.4000         0.4000           Calculate         Proton runal Households         No         0.4000         0.4000         0.4000         0.4000           Peaceting         Numeric of unal Households         No         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.4000         0.40000         0.40000         0.400	Transport	Urban Population	5	43.00000	44.00000	45.00000	45.00000		
Bunch Population         No         No         No           Calculate         Person / runal Households         Galo         Image: Calculate /	Household	Person/ urban Household	CBD	5.70000	5.40000	5.00000	4.50000		
Calculate         Number of rout Households         Number of rout HouseHousehousehousehousehousehousehousehouseh	Services	Number of urban Households	Million	1.83130	2.19459	2.66323	3.21937		
Results         Memory from I locatedad         dop         Image: Comparison of the image: Comp		Rural Population	%						
Protectul Labour Force         %         44 accos         49 accos         49 accos         49 accos         49 accos         49 accos         40 accos	Calculate	Person/ rural Household	сер						
Image: Control of the state of the	Results	Number of rural Households	Million						
Participaning Lucover Frome         %1         45.0000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000         64.00000<		Potential Labour Force	N	49.40000	49.55000	49.65000	49.70000		
Population in others with public transp.     %     24.0000     25.0000     26.0000     20.0000       Population inside large Cites     Million     5.0809     6.73341     7.89277     8.9529       * Enter Population data only for the first year & Population growth rate (Average annual) for all other years (encept first year)		Participating Labour Force	<b>%</b>	45.00000	49.00000	54.00000	60.00000		
Population revolve Large Cities         Million         5.83609         6.73341         7.69377         8.69298         Image: Cities C		Active Labour Force	Million	5.39642	6.53935	7.93376	9.60016		
* Enter Population data only for the first year & Population growth rate (Average annual) for all other years (except first year)		Population in cities with public transp	%	24.00000	25.00000	26.00000	27.00000		
		Population inside Large Cities	Million	5.82609	6.73341	7.69377	8.69229		
		* Enter Population data only for the first year &						-	)

To access the energy intensity of motive power, click the following in the main menu: Energy Intensities - > Industry and then click EI-Motive Power. The energy intensity of motive power also contains the same years.

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MAED Model for Analysis of Energy D	Energy intensities Name of the case study Demo MAEDD 1									MAED D 💙 Ab	out
Manage case studies	El-Specific Electricity	El-Thermal	Penetration	n of Energy Fo	rms in	Efficiencies in		Temperature level in	Penetration of Energy Forms in	Efficiencies in	
General information	Power use	use	ACM			ACM	1	Manufacturing	Manufacturing	Manufacturing	
Social economic data											
Energy intensities	Energy intensities of Motive Power (fin	nal energy per un	it of value as	dded)		-				di   <   >   ±   🗃	0
Industry	Item	Unit	2010	2015	2020	2025 Ch					
	Agriculture		×			6	-				
Transport	Farming	kWh/US\$	1.40000	1.30000	1.25000	1.20000					
Household	Construction					6	-				
Services	Buildings	kWh/US\$	0.10000	0.10000	0.10000						
	Mining						=				
Calculate	Metal ores	kWh/US\$	0.30000	0.30000	0.30000						
Results	Non-metal ores	kWh/US\$	0.20000	0.20000	0.20000						
	Manufacturing						=				
	Basic materials	kWh/US\$	0.15000	0.15000	0.15000	0.15000					
	Data notes										_

We will now extend the case study period to 2050. To do this, we will go to the general information page. We will now add the years 2030, 2035, 2040, 2045 and 2050. Note that the years are separated by commas. Do not forget to click the save button to save the changes.

MAED Mastel for Analysis of Fenergy De			AFD D 🗸 🖌 About 🕜
En Es Fr	General information		
A Manage case studies	Name of the case study Deno MATDD 1 Definitions (name, years, description)	Units	8
General information	Name of the case study	Provation	
Social economic data	Demo MAEDD 1	O Thousand   Million	
→* Energy intensities *	Tears 2010.2015.2020.2025.2030.2005.2540.2045.2050	ODP     ODP     ODP     ODP     ODD     Dillion [10 ⁿ ]     OTrillion [10 ⁿ ]     US Dollar	*
Transport	December of the second se	Transport Pessenger (plm) O Million [10"] O Trillion [10"]	
Household	They are there only for illustration purposes and will need to be replaced by actual country and scenario specific data by the user of the model.	Transport Freight (Rm) O Million [10*] O Trillion [10*]	
Calculate		Chergy unit	
•	A		
	Sectors & Clients		в
	Agriculture Construction Mining Manufacturing Energy Service Household Transport		
	D	Specific Motive Electricity Thermal use Power use	
	Farming		
		800 800	770. Versioe: 2.0.0 202011

Let us review the tables of the demographic data.



Manage case studies	Demography GDP													
General information	bungruphy dar													
Social economic data	Demography											di 🤇	> 🛓	8 0
Energy intensities *	Item	Unit	2010	2015	2020	2025	2030	2035	2040	2045	2050 Aart			
	Population *	Million	24.27539	26.93364	29.59143	32.19368				2010				
Industry	Population growth rate *	% per annum		2.10000	1.90000	1,70000								
Transport	Urban Population	5	43.00000	44.00000	45.00000	45.00000								
Household	Person/ urban Household	cap	5.70000	5.40000	5.00000	4.50000								
Services	Number of urban Households	Millon	1.83130	2.19459	2.66323	3.21937								
	Rural Population	8												
Calculate	Person/ rural Household	cap												
Results	Number of rural Households	Million												
	Potential Labour Force	5	49.40000	49.55000	49.65000	49.70000								
69	Participating Labour Force	5	45.00000	49.00000	54.00000	60.00000								
	Active Labour Force	Millon	5.39642	6.53935	7.93376	9.60016								
	Population in cities with public transp	5	24.00000	25.00000	26.00000	27.00000								
	Population inside Large Cities	Million	5.82609	6.73341	7.69377	8.69229								
	* Enter Population data only for the first year &					in forester in a	(you)							

Let us also review the tables of the energy intensities of motive power.

En Es Fr		ergy inte te of the case a	Insities fuely Demo MAEDD 1													
Manage case studies		Motive	El-Specific Electricity	El-Thermal		n of Energy F	orms in	Efficiencies in		erature level i	n	Penetrat	ion of Energy Forms in		encies in	
General information	Po	wer	use	use	ACM			ACM	Manu	facturing		Manufac	sturing	Mani	ifacturing	
Social economic data	En	ergy intensit	ties of Motive Power (fi	nal energy per un	it of value a	dded)								h < >	1 ± 1 8	0
Energy intensities ~		item		Unit	2010	2015	2020	2025	2030	2035	2040	2045	2050 Chart			
Industry		Agriculture		Unit	2010	2013	2020	2025	2030	2000	2010	2040				
Transport		Farming	-	kWh/US\$	1.40000	1.30000	1.25000	1.20000								
Household		Constructi	on										8			
Services		Buildings		kWh/US\$	0.10000	0.10000	0.10000	0.10000								
		Mining											-			
Calculate		Metal ores		kWh/US\$	0.30000	0.30000	0.30000	0.30000								
Results		Non-metal Manufactu		kWh/US\$	0.20000	0.20000	0.20000	0.20000					8			
69		Basic mate		kWh/US\$	0.15000	0.15000	0.15000	0.15000								
	Da	ta notes														
	-	ou motou														

We see that, in both tables, the study period has extended. Also notice that there are no data for these new years.



Mage and state       Mage and			nergy inte	dudy Demo MAEDD 1													
Image: Constraint of the second information     Power use     ALM     ALM     Manufacturing     Manufacturing <t< th=""><th>Manage case studies</th><th>E</th><th>Adother</th><th>ELSnarific Electricity</th><th>FLThermal</th><th>Penatratio</th><th>n of Energy E</th><th>orme in</th><th>Efficiencies in</th><th>Temo</th><th>eratura laval in</th><th></th><th>Penetrat</th><th>ion of Energy Forme in</th><th>Efficie</th><th>ncies in</th><th></th></t<>	Manage case studies	E	Adother	ELSnarific Electricity	FLThermal	Penatratio	n of Energy E	orme in	Efficiencies in	Temo	eratura laval in		Penetrat	ion of Energy Forme in	Efficie	ncies in	
Every intensities         Loberty intensities of notice Forwer (mail entry) per unit of value species)         Loberty         Loberty <thlobry< th="">         &lt;</thlobry<>	General information						nor energy r	01112111									
Torge pletratilies         V           Indextry         Intern         Unit         2010         2015         2020         2025         2030         2025         2030         2025         2030         2025         2030         2025         2030         2025         2030         2025         2030         2025         2030         2025         2030         2025         2030         2025         2030         2025         2030         2025         2030         2025         2030         2025         2030         2025         2030         2025         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030         2030 <td>Social economic data</td> <td>E</td> <td>erav intensit</td> <td>ties of Motive Power (fr</td> <td>nal energy per un</td> <td>it of value a</td> <td>dded)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>lab la la</td> <td>4.16</td> <td>a 0</td>	Social economic data	E	erav intensit	ties of Motive Power (fr	nal energy per un	it of value a	dded)								lab la la	4.16	a 0
Industry         Apriculate         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I	" Energy intensities ~	-															
Tanagort         Faming         Why US         1.40000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         1.2000         0.1000         1.2000         1.2000         0.1000         1.2000         1.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.20	Industry	-			Unit	2010	2015	2020	2025	2030	2035	2040	2045				
Household         Censtruction         Paulings         Wh/USS         0.0000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000         0.1000	Transport			e	kWb/USS	1.40000	1.30000	1.25000	1,2000								
Services         Maing         Participation	Household			ion													
Mining         Mining         Conduite         Mining         Conduite         Conduite <thconduite< th=""> <thconduite< th=""> <thcond< td=""><td>Services</td><td></td><td></td><td></td><td>kWh/US\$</td><td>0.10000</td><td>0.10000</td><td>0.10000</td><td>0.100.0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></thcond<></thconduite<></thconduite<>	Services				kWh/US\$	0.10000	0.10000	0.10000	0.100.0								
Montestaring         Venues         Venues         Venues         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0.2000         0																	
Important         Manufacturing           (m)         Basic matched         VWh/USS         0.15000         0.15000         0.15000														-			
ee Basic materials EWh/USS 0.15000 0.15000 0.15000 0.15000	/ Results				KWIII/USQ	0.20000	0.20000	0.20000	0.20010								
La la nota	**				kWh/US\$	0.15000	0.15000	0.15000	0.15000								
		Di	ita notes														

Congratulations, you have now successfully added new years to the definition of your case study.