Capacity Building for Agenda 2030

Model Management Interface (MoManI) for OSeMOSYS

Supporting Development Investments and INDCs

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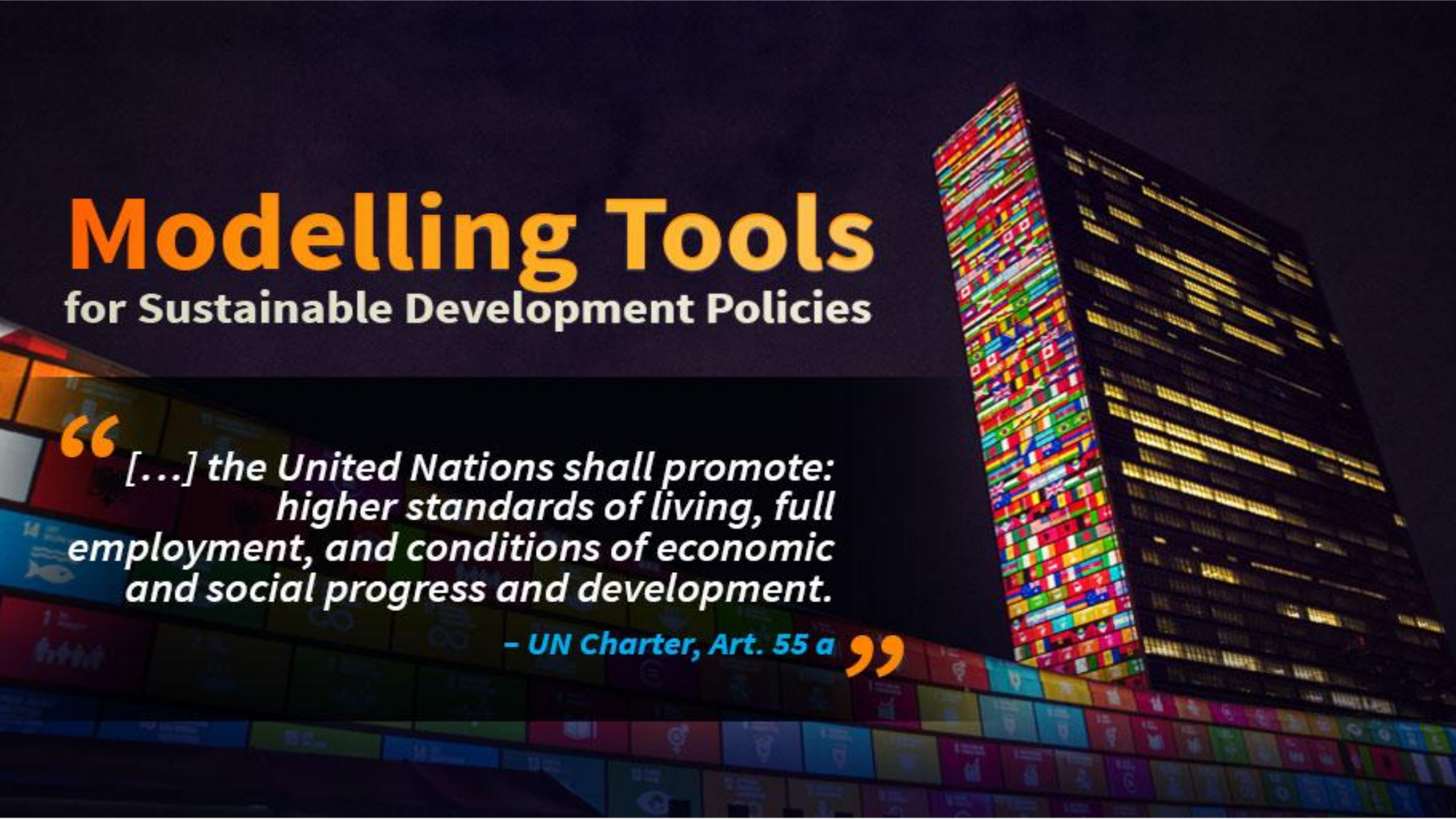
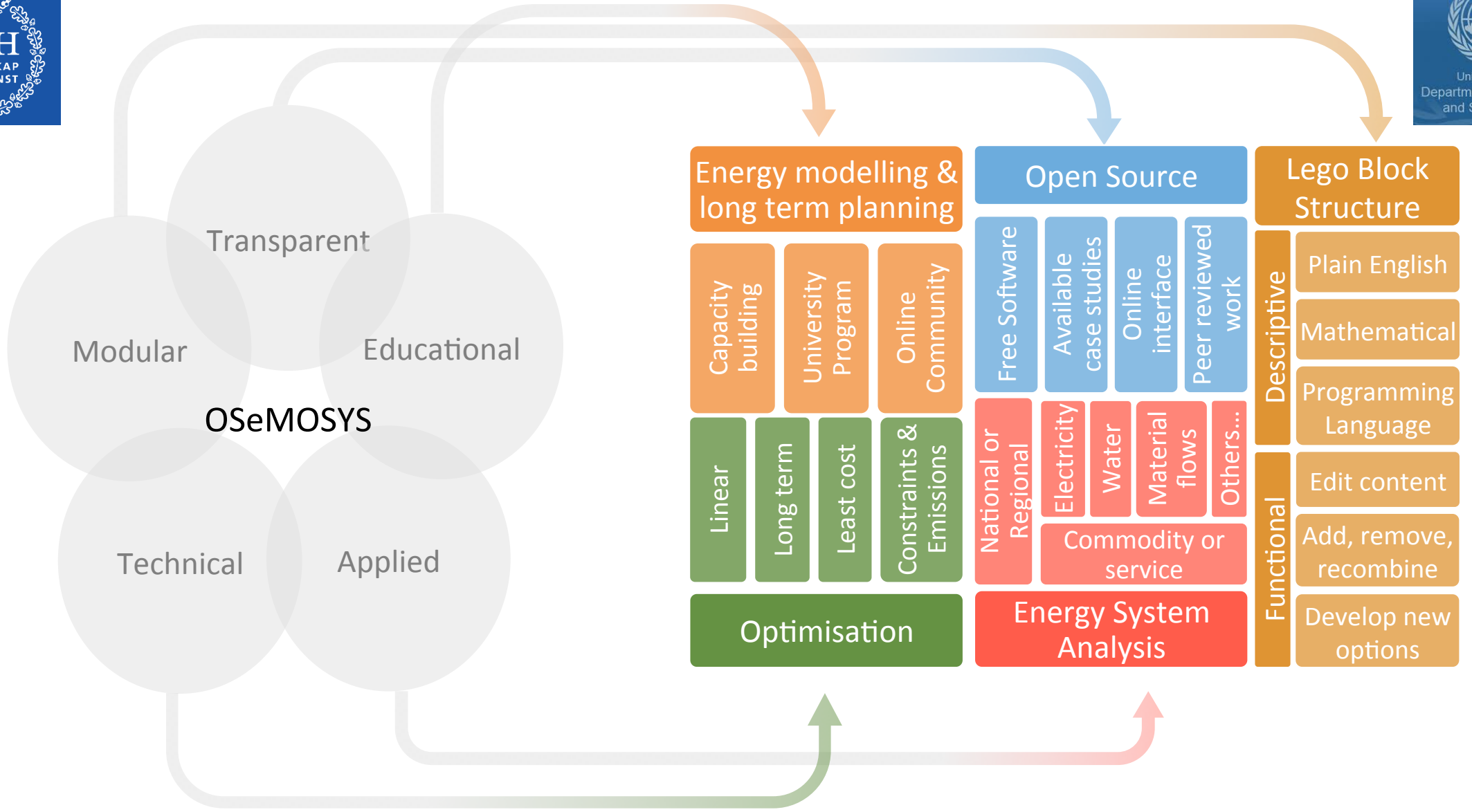
Modelling Tools

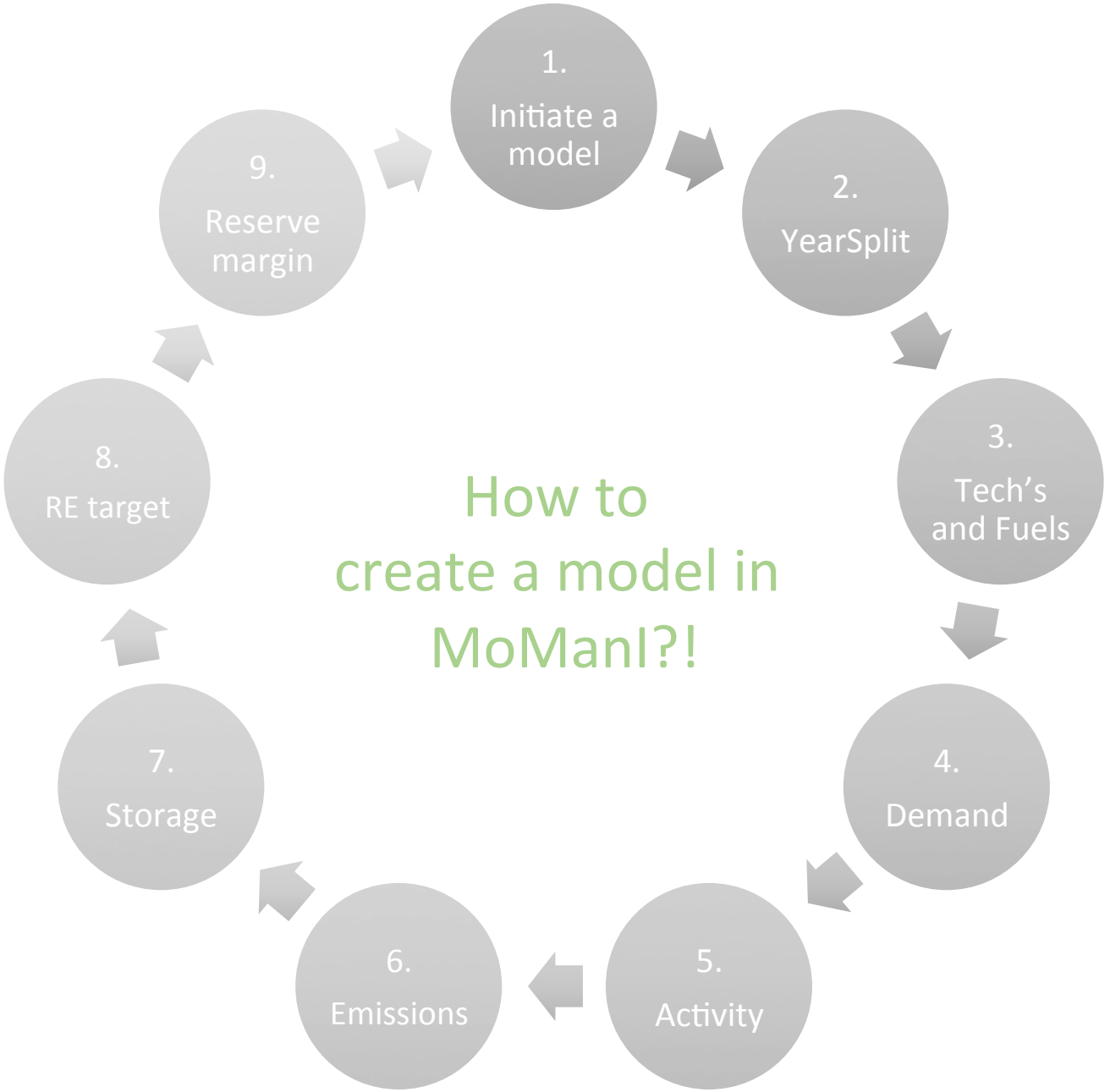
for Sustainable Development Policies



"[...] the United Nations shall promote: higher standards of living, full employment, and conditions of economic and social progress and development."

– UN Charter, Art. 55 a


Transparent
Modular
Educational
OSeMOSYS
Technical
Applied
Energy modelling & long term planning
Capacity building
University Program
Online Community
Linear
Long term
Least cost
Constraints & Emissions
Optimisation
Open Source
Free Software
Available case studies
Online interface
Peer reviewed work
National or Regional
Electricity
Water
Material flows
Others...
Commodity or service
Energy System Analysis
Lego Block Structure
Descriptive
Plain English
Mathematical
Programming Language
Functional
Edit content
Add, remove, recombine
Develop new options


1.
Initiate a model
2.
YearSplit
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Tech's and Fuels
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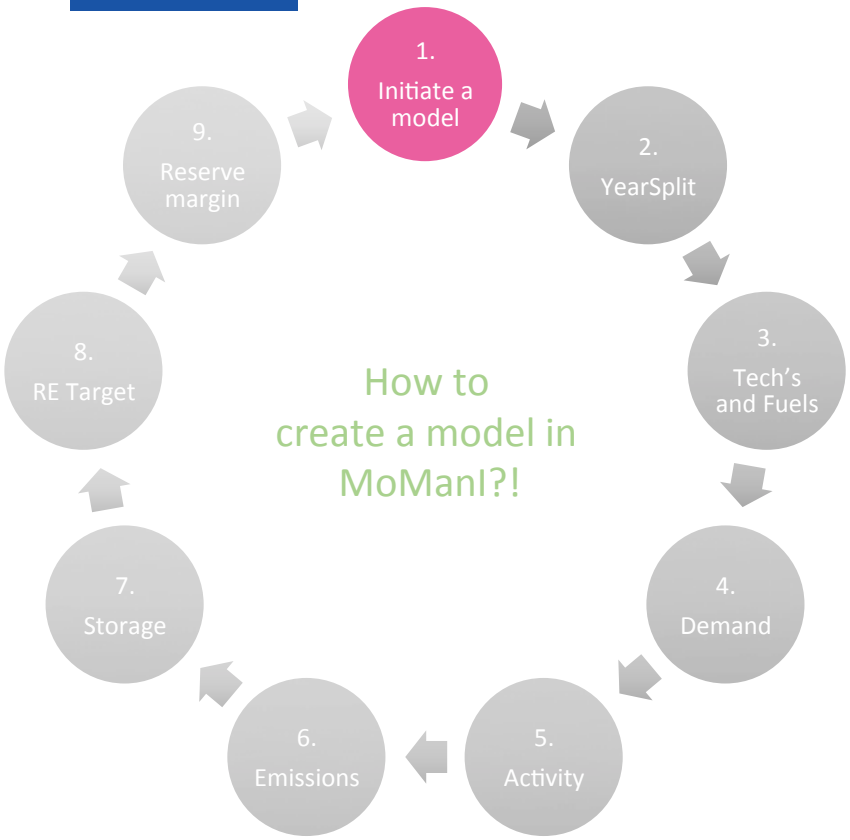
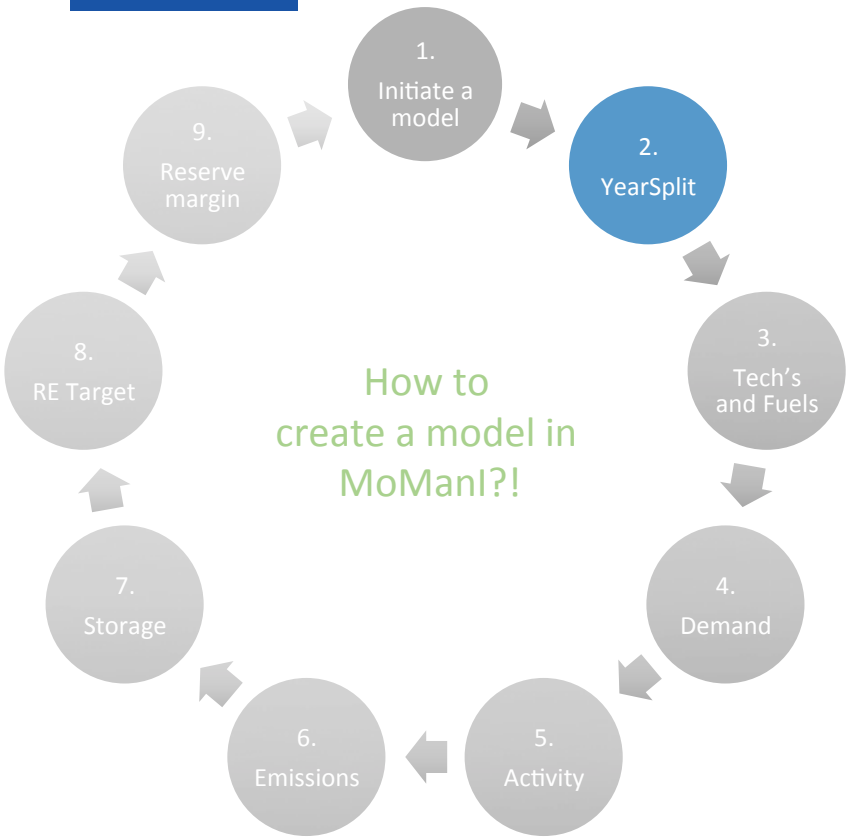
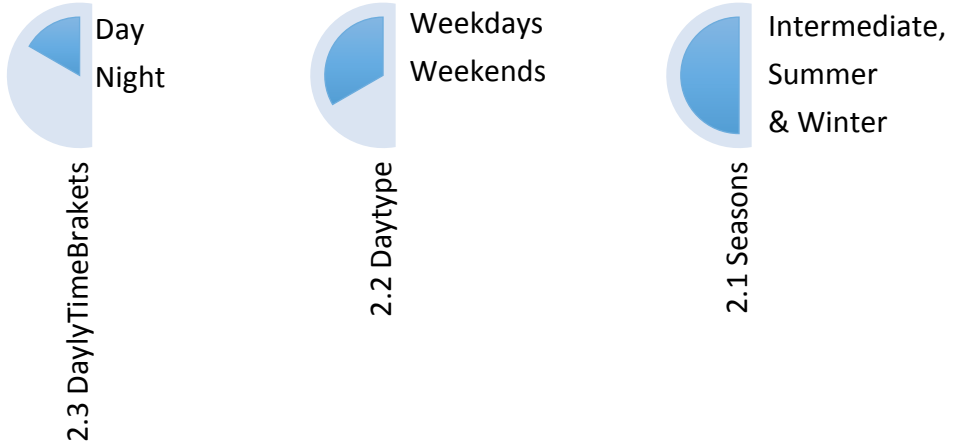
Reserve margin
How to create a model in MoManI?!



1. Initiate a model:

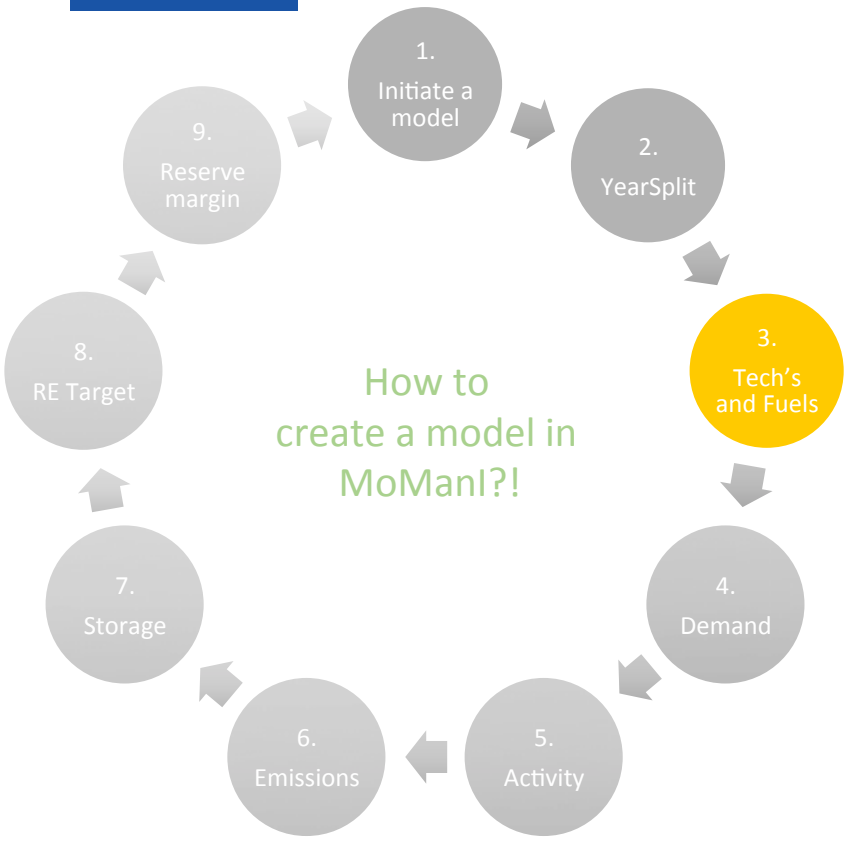
- 1.1 Name & description
- 1.2 Select constraints
- 1.3 Model years
- 1.4 Region
- 1.5 List of Fuels and Technologies
- 1.6 Discount Rate
- 1.7 Mode of Operation
- 1.8 Depreciation method





2.4 TimeSclice					
ID	IN	SD	SN	WD	WN

Year Split	
Measure the duration of the timesclice.	The sum of each entry over the year should =1



3.1 Costs

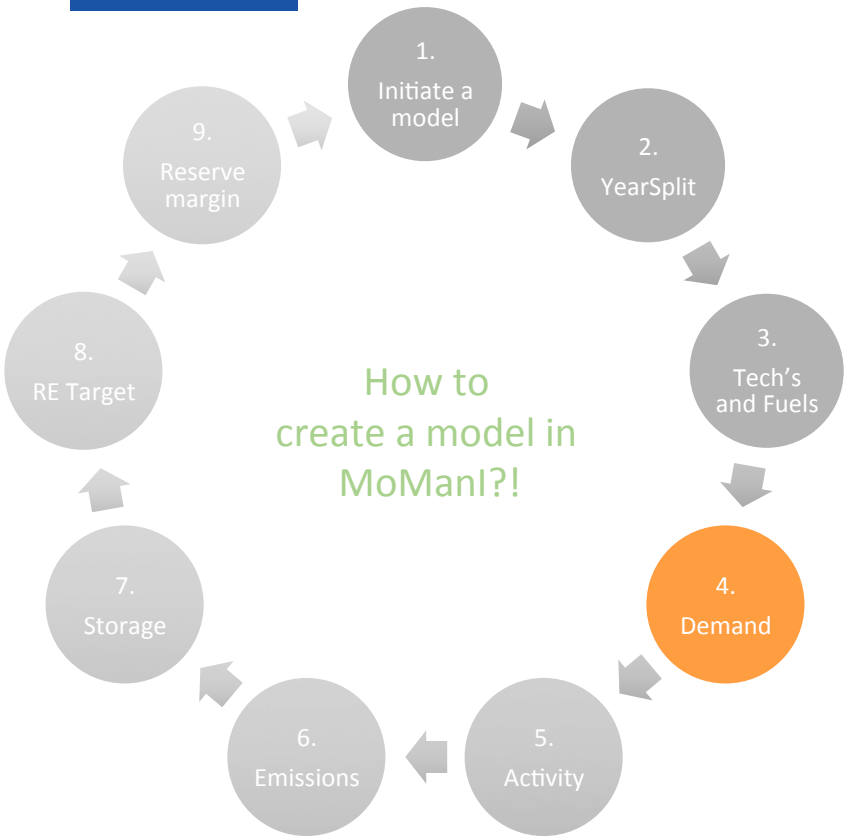
- Capital Cost
- Fixed Cost
- Variable Cost

3.2 Performance

- Input Activity Ratio
- Output Activity Ratio
- Availability
- Capacity Factor

3.3 Capacity

- Residual Capacity
- Total Annual Max Cap
- Total Annual Min Cap
- Total Annual Max Cap Investment
- Total Annual Min Cap Investment

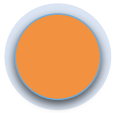


4.1

Specified Annual Demand

4.2

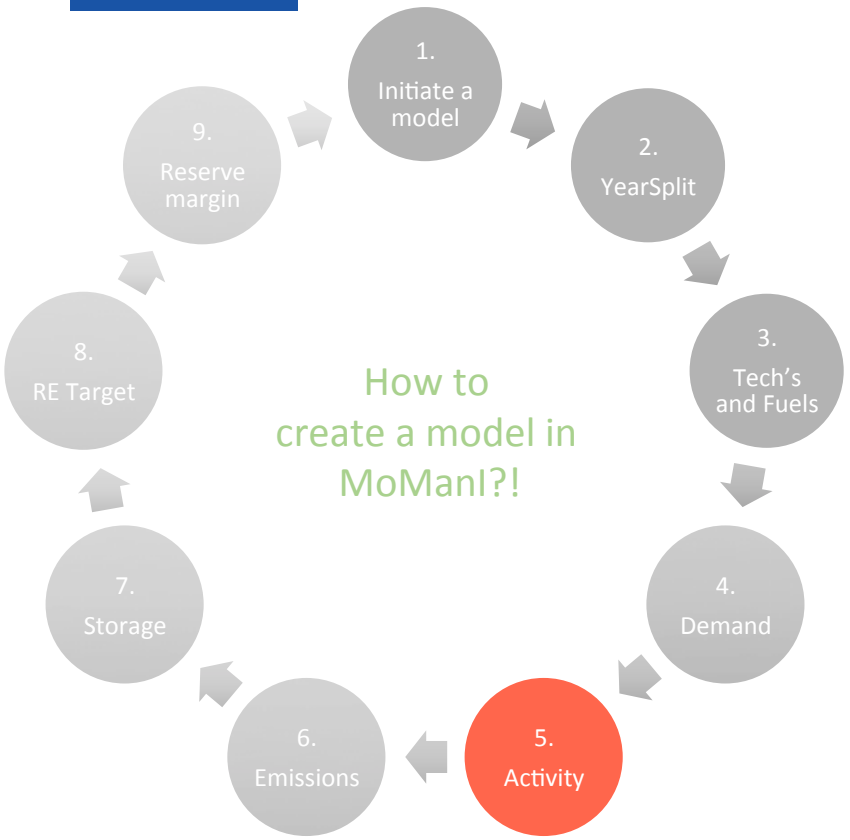
Specified Demand Profile



4.3

Accumulated Annual Demand

(usually set to default = 0)



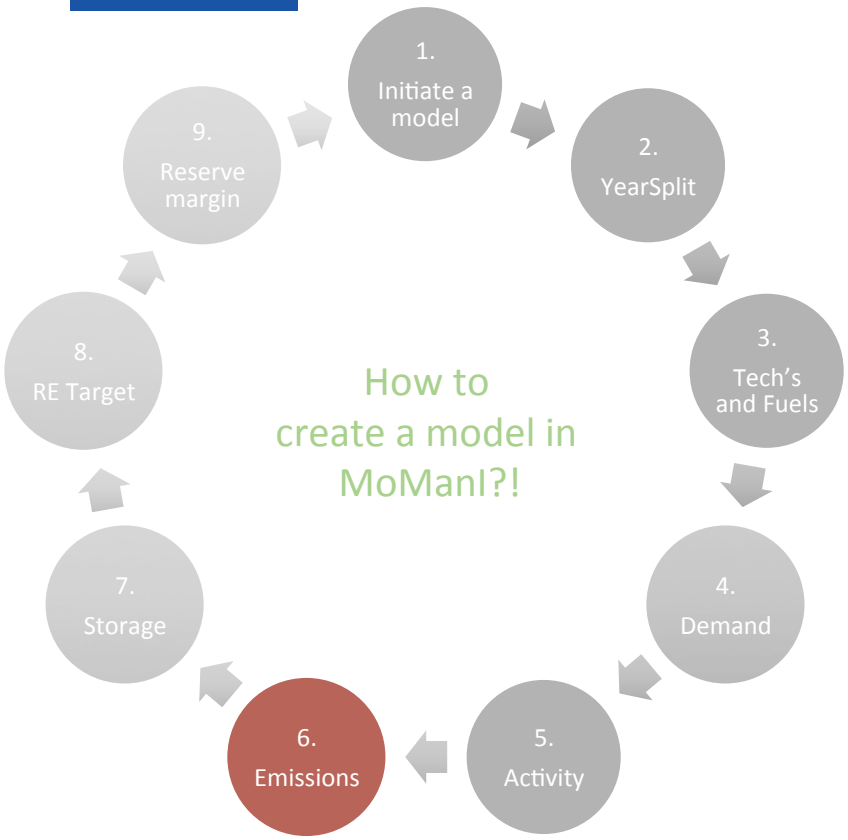
5.1 Capacity To Activity Unit

5.2 Total Technology Annual Activity Lower Limit

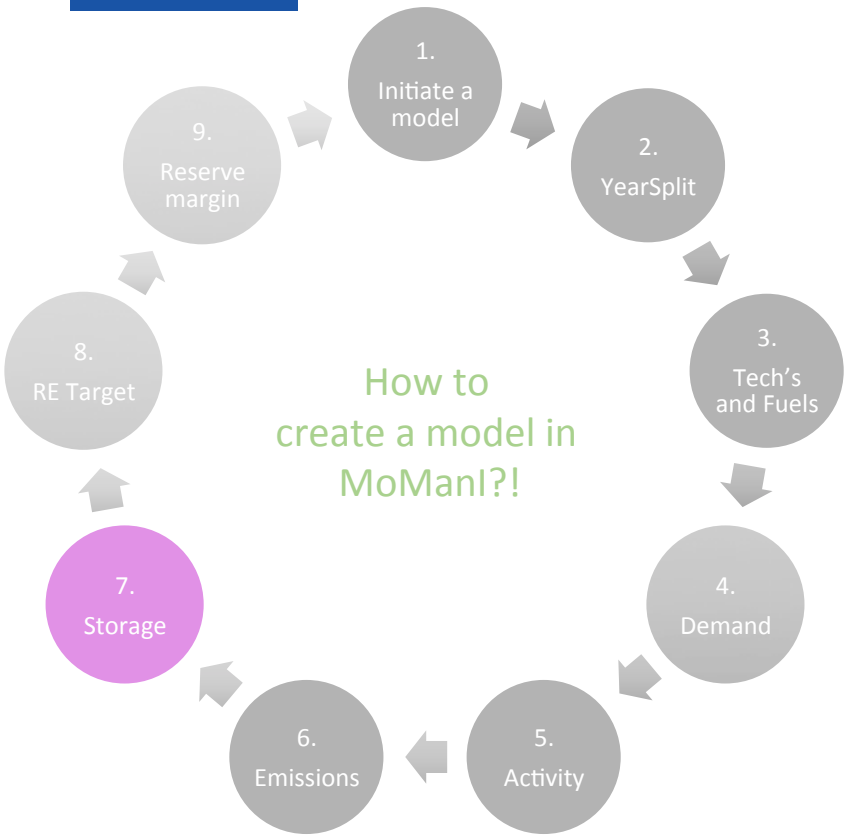
5.3 Total Technology Annual Activity Upper Limit

5.4 Total Technology Model Period Activity Lower Limit

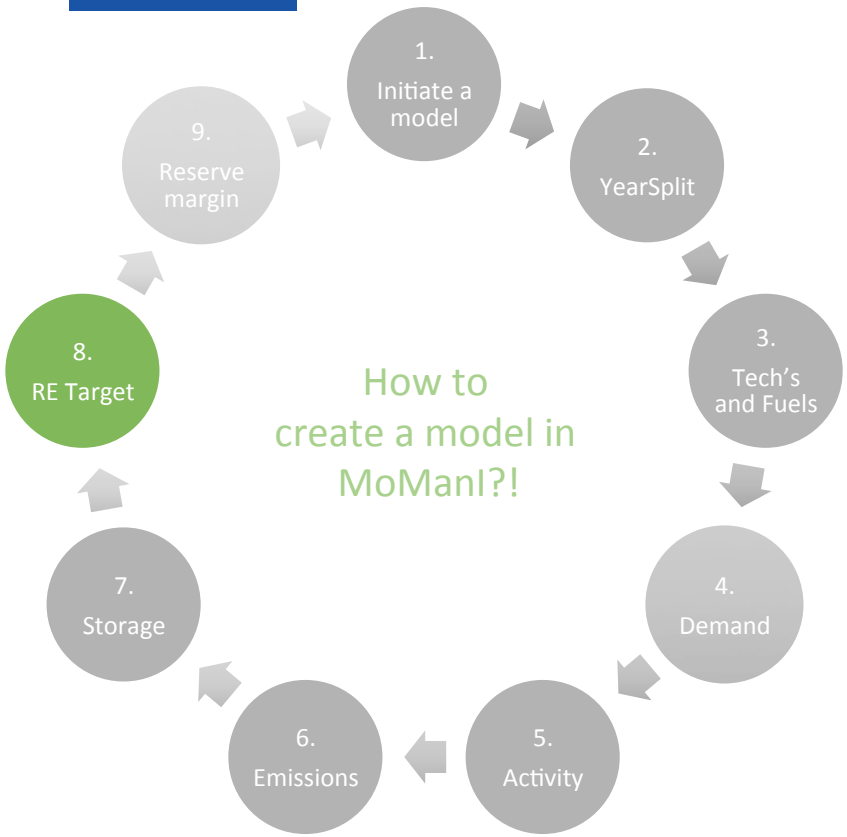
5.5 Total Technology Model Period Activity Upper Limit



- 6.1 set "Emission": CO2 , NOx
- 6.2 AnnualEmissionLimit
- 6.3 AnnualExogenousEmissions
- 6.4 EmissionActivityRatio
- 6.5 EmissionsPenalty
- 6.6 ModelPersiodEmissionLimit
- 6.7 ModelPeriodExogenousEmission



- 7.1 Set "Storage"
- 7.2 Set Conversion (ld, ls and lh)
- 7.3 CapitalCostStorage
- 7.4 MinStorageCharge
- 7.5 OperationalLifeStorage
- 7.6 ResidualStorageCapacity
- 7.7 StorageLevelStart
- 7.8 StorageMaxChargeRate
- 7.9 StorageMaxDischargeRate
- 7.10 TechnologyFromStorage
- 7.11 TechnologyToStorage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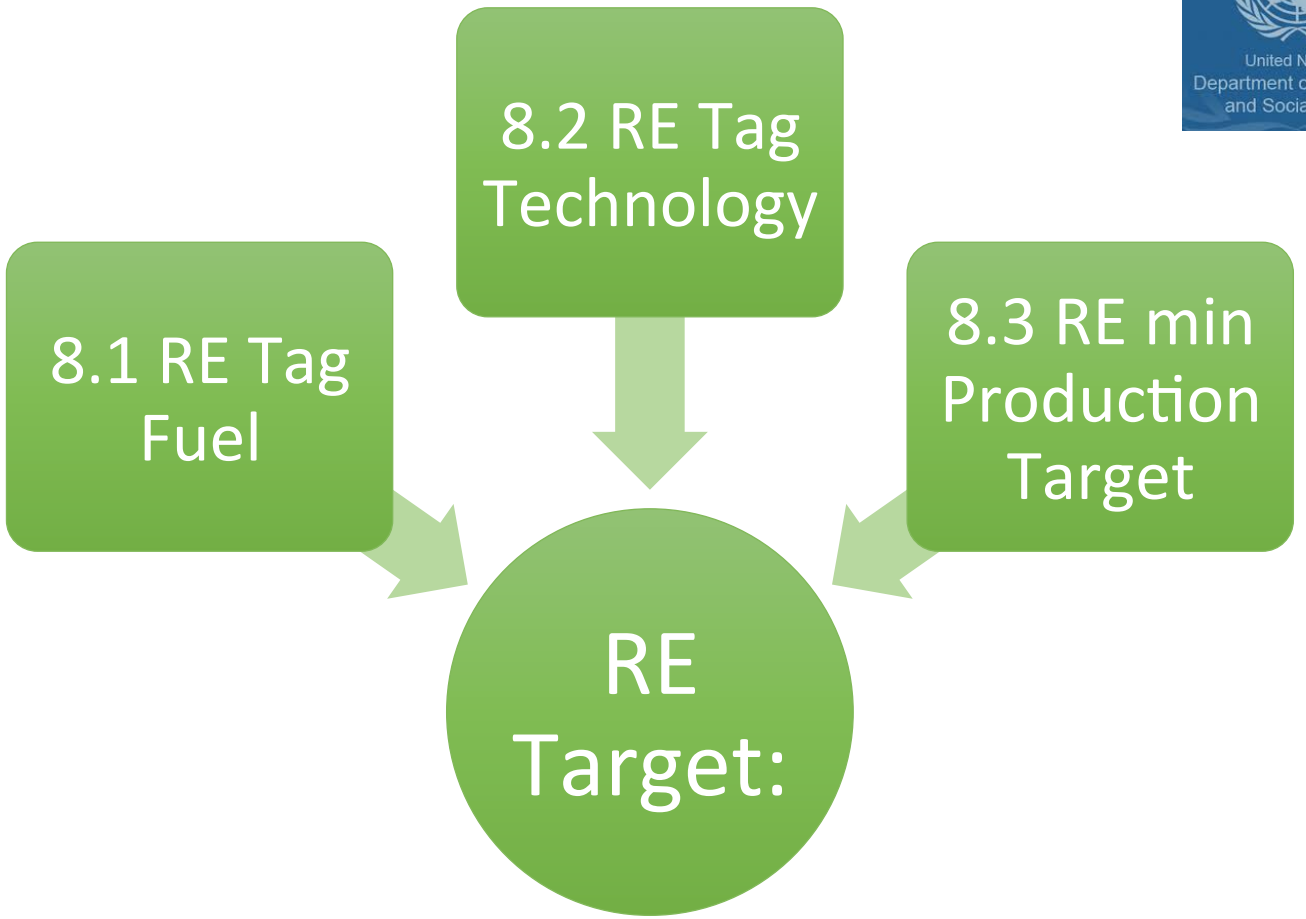
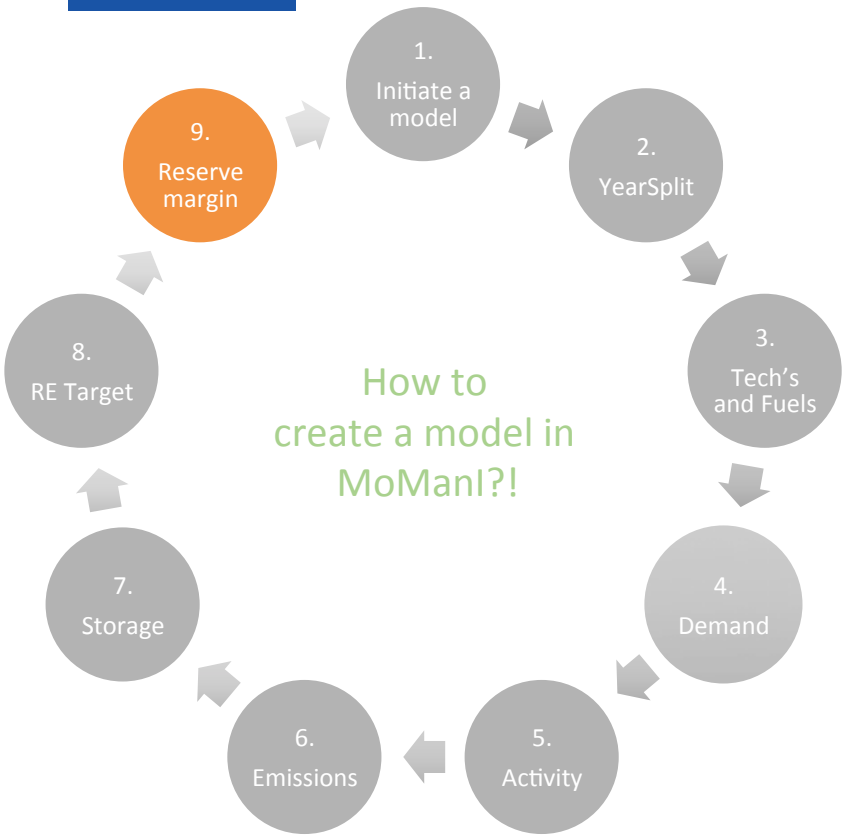

8.1 RE Tag Fuel
8.2 RE Tag Technology
8.3 RE min Production Target
RE Target: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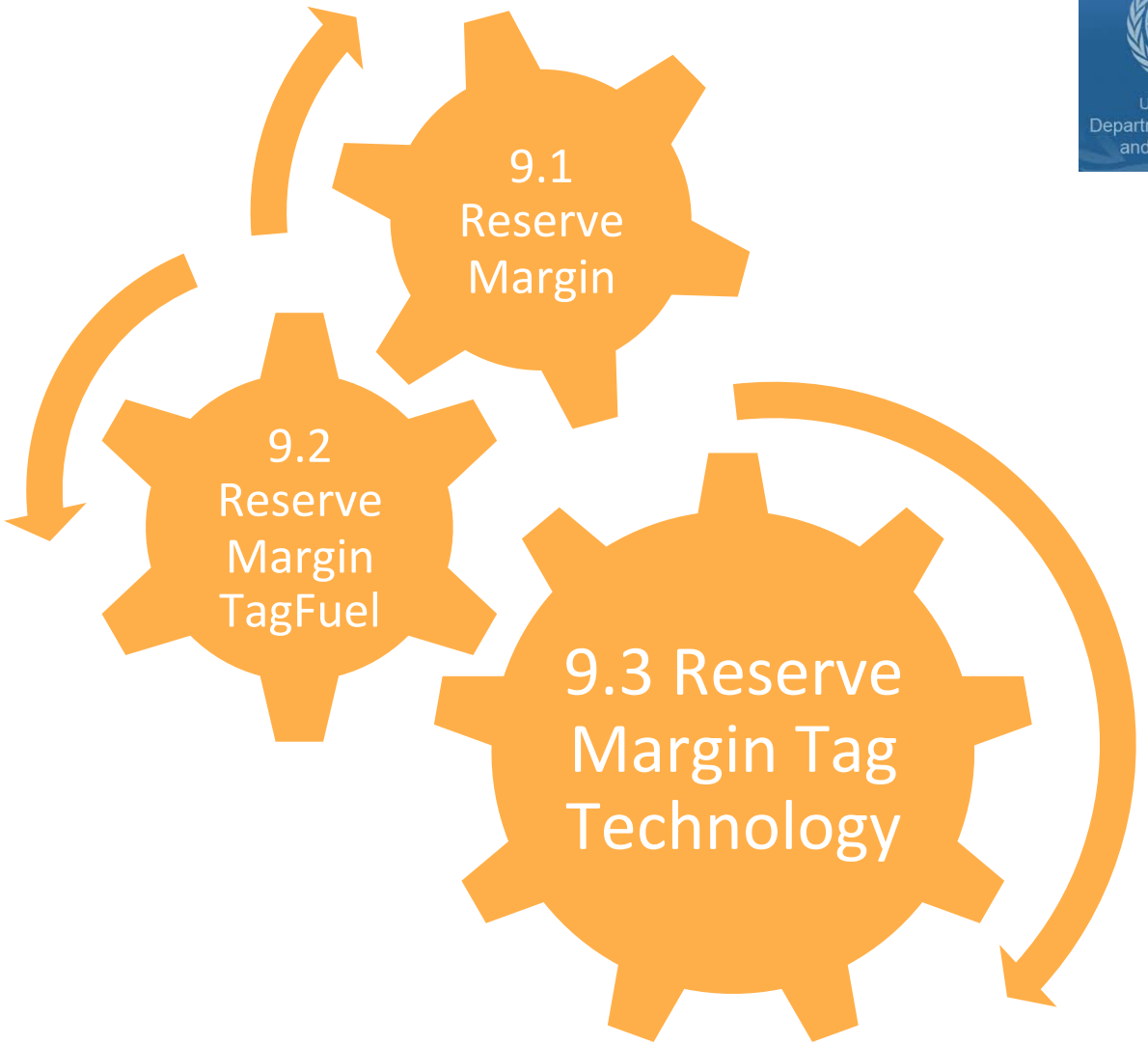
9.1 Reserve Margin
9.2 Reserve Margin TagFuel
9.3 Reserve Margin Tag Technology