General introduction

AMIGDALA

POLICY LAB

Funded by the European Union under the grant agreement 101138534. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Health and Digital Executive Agency (HADEA). Neither the European Union nor the granting authority can be held responsible for them.

AMIGDALA glossary

Indicators	Primary	The 'five' dimensions of climate neutrality.	The target for these is zero.
	Secondary	The indicators that decisionmakers use. + competitiveness + resilience	As identified by our preliminary research work.
Framework circumstances	Background scenario	A given for both public and private decision-makers. Cannot influence, but uncertain.	
	Foreground scenario	Policy areas utilized to steer pathways & regulation instruments. Appetite for investments.	Energy, feedstock, circularity, products, ...
Control levers	Public	Regulatory instruments - subsidies, mandates, pricing.	
	Business	Deployment of capital - investments and divestments.	
Destination		Configuration of industrial production in Europe, with European resource production and imports.	Climate neutrality of a configuration is a target that must be achieved.
Pathways		Trajectories from where we are today to climate neutral destinations.	
Decision framework		Characterising of pathways by the indicators and weighting of indicators to rank the pathways	"Post-mortem" of multiple model runs.

AMIGDALA glossary

	AMIGDALA FRAMEWORK	Structure in which the modules of the AMIGDALA framework work together.
	MODULES	Distinct functional units that operate within the AMIGDALA framework
EXPERTISES	**SCENARIO BUILDING**	Expertise focussed on scenario analysis, to develop consistent (foreground and background) scenarios and control levers on a global, EU and local level
	INTEGRATED MODELLING	Expertise to develop a consistent and converging integrated model suite to analyse energy, material and climate system transitions and their impacts at global, EU and local level.
	DATA MANAGEMENT	Expertise on data management and data validation.
	DECISION ANALYSIS	Expertise on decision support, decision analysis and dashboard display.
MODULES	**INTEGRATED MODEL SUITE**	Module consisting of a combination of models on economy and trade, feedstock and energy, circularity and environment to analyse energy, material and climate system transitions and their impacts at global, EU and local level.
	DATA EXPLORER	Module consisting of combination of data repository, historical data and data output from models.
	SCENARIO MODULE	Module consisting of combination of drivers, archetypes and control levers.
	DECISION SUPPORT DASHBOARD	Module consisting of the graphical user interface and interaction process for the application of the decision analysis logic
	DATA REPOSITORY	Module consisting all existing data-sets that are already used by the models.
	DECISION-MAKER	Roles in governmental and industry organizations that have a mandate to formalise and implement decisions.
	INDICATOR	A parameter that decision-makers find relevant to assess the situation from their perspective and that may drive the decisions
	KEY PERFORMANCE INDICATOR	Sub-set of indicators that are high-graded for their relevance across government and industry

The AMIGDALA project

The assignment of the Horizon Europe call

Climate neutral by 2050
Growth without depletion
Just transition

1. Development of an **integrated model suite**, towards understanding pathways for energy intensive industry to contribute to the EU's climate neutrality
2. Modelling of **possible pathways** of how industry can become climate neutral ('energy, emissions, feedstock')
3. Facilitate **policy decisions** for industry, climate & energy; EU and member state levels
4. **Projections of market uptake** of transformative solutions and products for selected framework conditions

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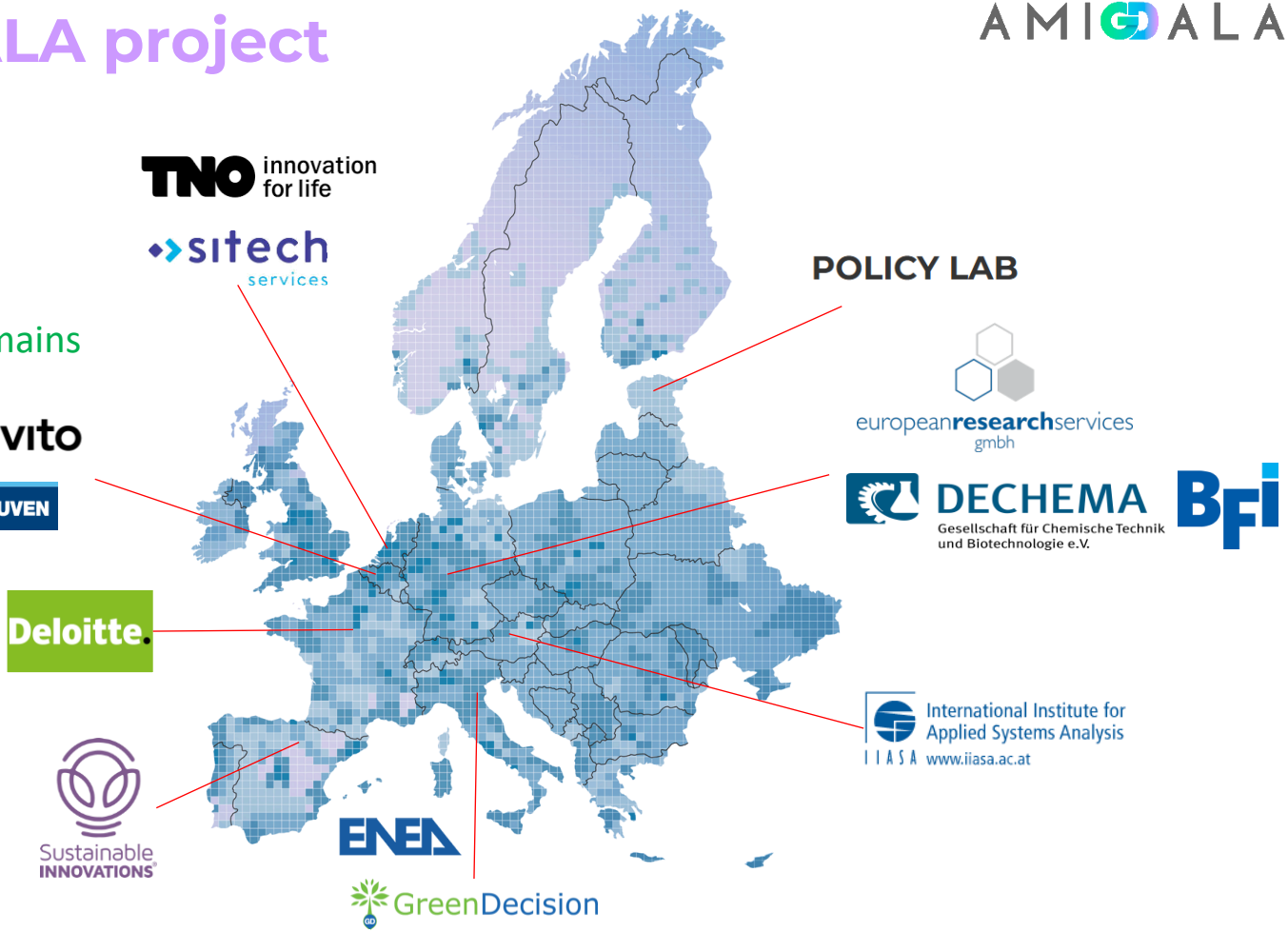
The partners

EU project management
Communication

Modelling in various domains
Scenario development
Decision making
Technology
Global trade

13 partners
25 experts
€ 7 mln grant



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Making projections through scenarios and modelling

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Historic data from 1990
Projections towards 2070
Objective function: lowest cost

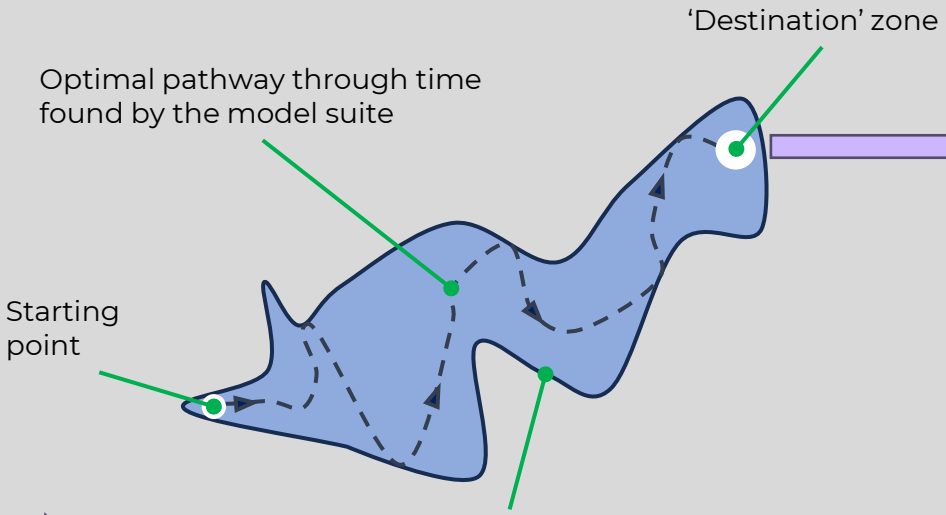
Integrated model suite, models basic industry production within context of climate, economy, energy and trade

Scenarios

Background
Foreground

Control levers
- Public
- Private

Objective function for pathway = highest NPV



Boundary conditions (multi-dimensional)

Output

Indicators

Decision-makers' preference analysis

Dashboard & Results browser

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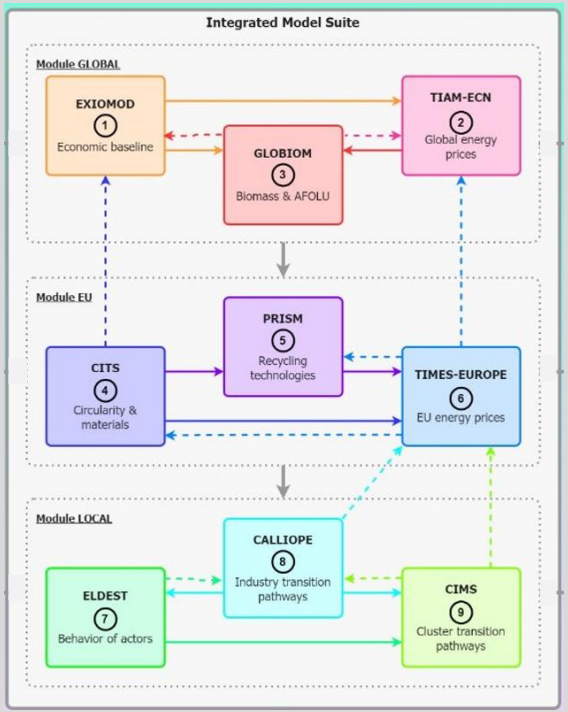
What is in the integrated model suite?

Global

EU

Local



Established models are run in sequence, grouping by spatial and temporal levels

(1) Proof of concept
- Without iteration between models
- One industry sector only

(2) Full model
- Selective iteration
- All industry sectors

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‘Control levers’

Background: SSP scenarios

Foreground: Informed by (current) EU policy, exploring options for regulation

Examples of business control levers

Investments in	Markets
	Operating assets
	Feedstock supply
	Energy supply
Divestments from	Markets
	Operating assets
	Feedstock supply
	Energy supply

Examples of government control levers

Regulation & mandates	Markets for products (i.e. green quota)
	Markets for feedstock (i.e. recycle rates)
	Markets for energy
	Use/allocation of feedstock
	Use/allocation of energy
	Land use
Subsidies	Exports, imports
	Deployment of technology
	Feedstock
	Energy
Pricing	Import (CBAM), exports
	Feedstock
	Energy
	Emissions
Facilitation	International trade agreements
	Infrastructure development
	Education

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Output in terms of indicators used by decisionmakers

	#	INDICATORS
INDUSTRY	1	Energy mix evolution and price
	2	Availability & cost of technology
	3	Raw material and feedstock availability and cost
	4	Demand evolution in Europe and globally + Trade balance
POLICY	5	Carbon price trajectory
	6	Industry emission reduction
	7	Job creation
	8	Tax revenue + cost to public sector
	9	Demand evolution in Europe and globally + Trade balance
	10	Wider environmental impact

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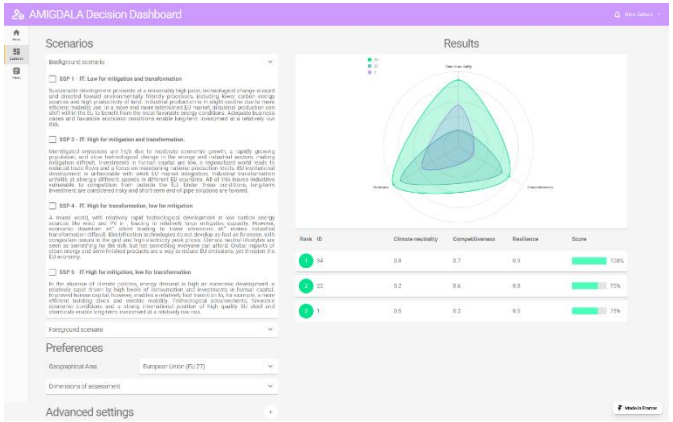
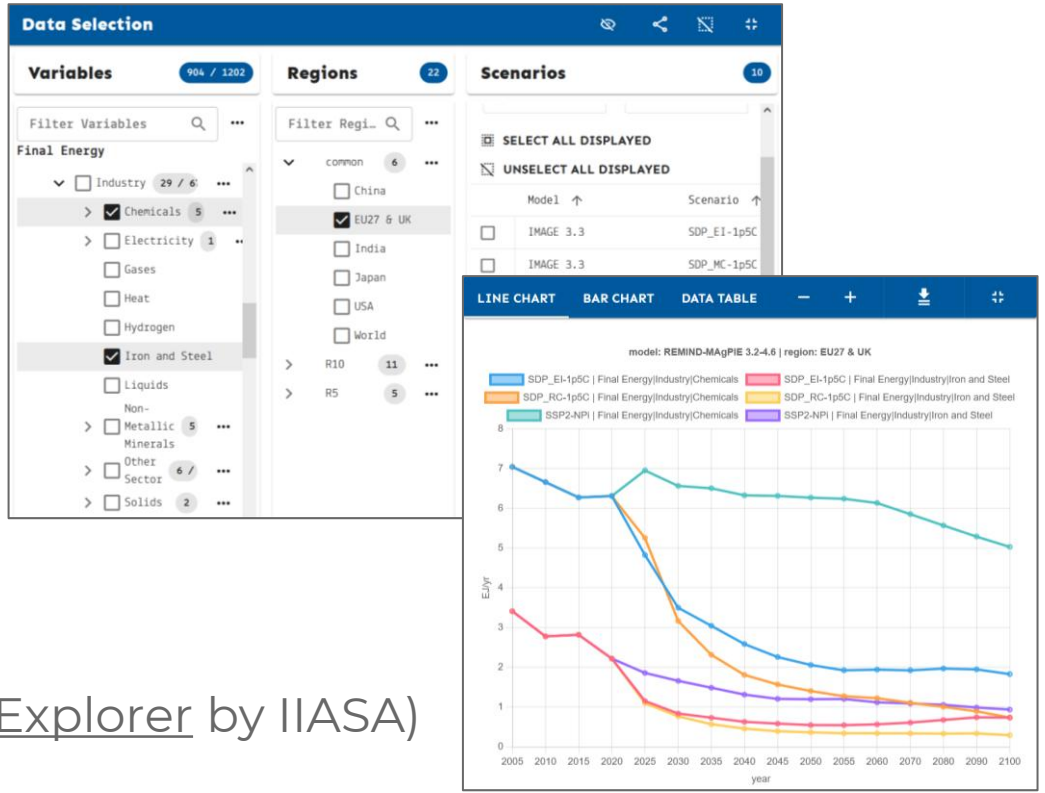
User interfaces (impressions)

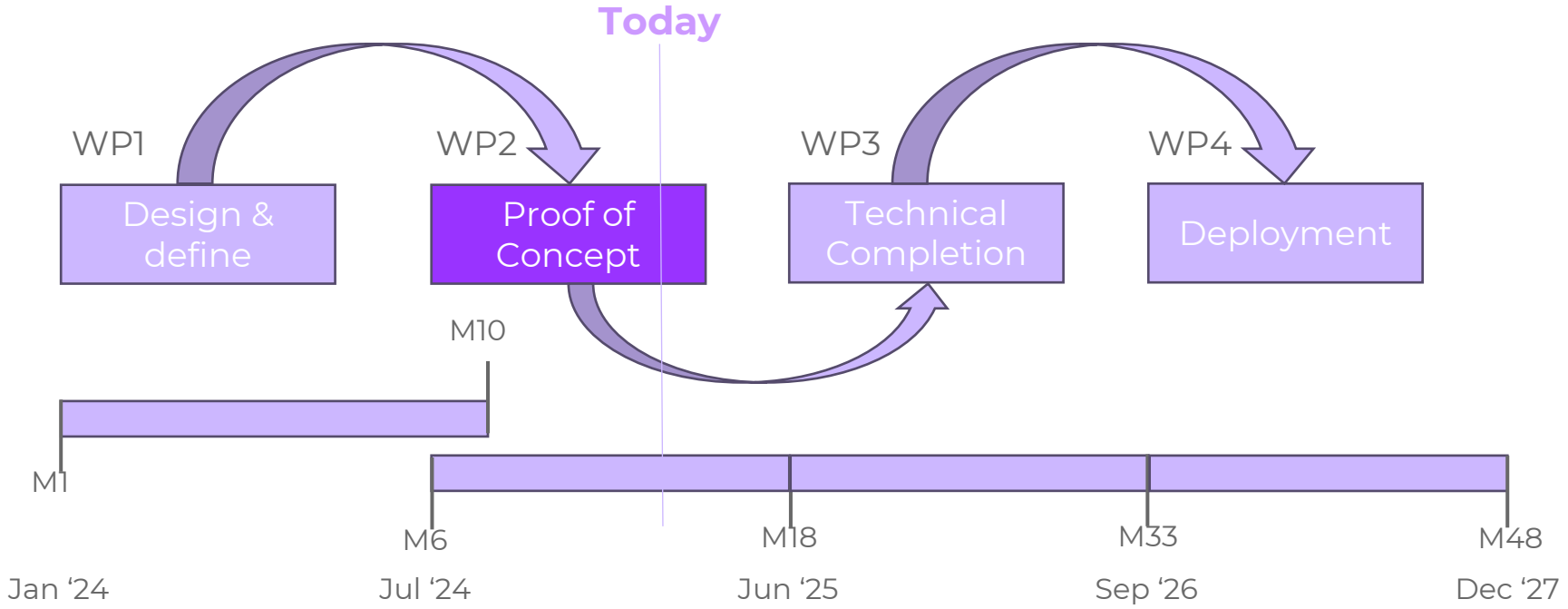


Decision dashboard



(SHAPE Scenario Explorer by IIASA)

Where we stand today



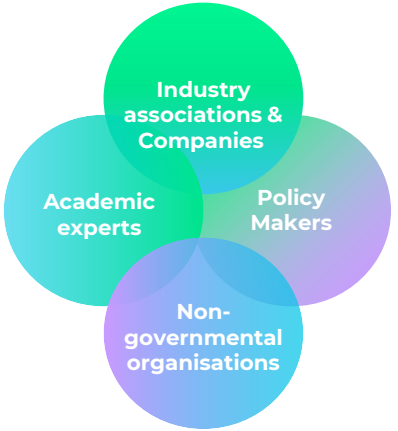
Objective of WP2: Realizing a Proof of Concept of the AMIGDALA framework for one subsector

Summary of your steer

Join our Community of Practice (COP)

To find out more on the AMIGDALA **Community of practice**

To register



AMIGDALA web presence: Alliance for modelling industries

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WWW.AMIGDALAPROJECT.EU

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