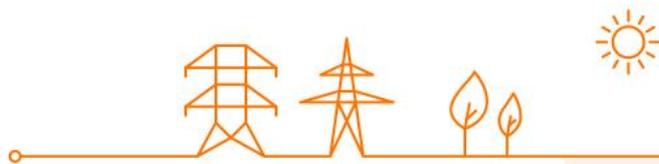


## TASK FORCE SCENARIOS

# Call for evidence

This document gives more information on what is expected for the call for evidence in regards to the Task Force Scenarios - **Workshop topic #1: Definition of Storylines (High Level Scenarios)**



## Introduction

Scenarios used by Elia are intended to have a diversified view on long-term energy supply and demand considering e.g. the ongoing trends, policy ambitions and technological developments... in-line with the long-term targets. Those are then used for identifying the requirements of the system and assess the robustness of certain decisions or investments. Furthermore, scenarios are used to assess also different futures and hence ensure that the choices made are robust in those scenarios.

The scenarios and their storylines referred to here should be designed to reflect long-term EU and national policy goals and strategies. **Besides these should also aim to consider uncertainties and strategies for the future development of the energy system with a focus on the impact for Belgium.**

The construction of storylines should be made considering a technology, source and energy carrier neutral starting point. For each storyline, choices of technology, source and carrier will be defined as the 'best' strategies to cope with each corresponding future and/or level of ambition.

In order to ensure consistency with the EU approach, it is therefore proposed to use the TYNDP scenarios and their storylines as starting point.

## Overview of TYNDP scenarios

### Distributed Generation and Global Ambition (TY2040-2050)

Currently two long-term (LT) scenarios are defined within the ENTSOs TYNDP scenario process covering the period TY 2040 – 2050. These are referred to as:

- i) Distributed Energy (DE)
- ii) Global Ambition (GA)

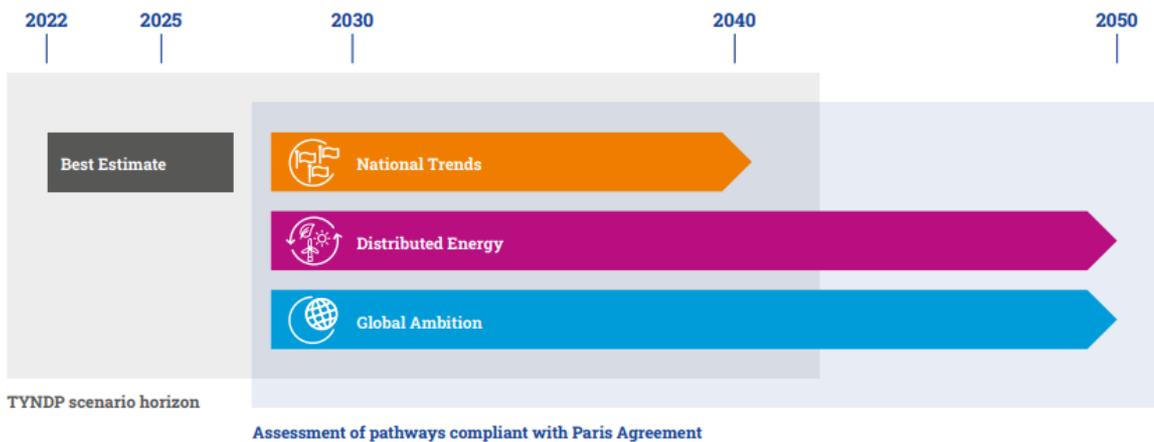


Figure 2: TYNDP Scenario horizon and framework

All the details regarding the development of these two LT scenarios can be found on the following link:

 [DOWNLOAD — ENTSOs TYNDP 2022 Scenarios](#)

## Detailed information

An important input from ENTSOs TYNDP scenario process to the *Task Force Scenario's* is the so-called 'Storyline Matrix', which can be downloaded in editable excel format from the following link:



The TYNDP 'Storyline Matrix' is presented below. This matrix presents the storyline 'drivers', 'dimensions' and characteristics as rows, and quantifies these in a categorical way in a column for each storyline.

**This matrix provides the starting point of the process for 'call for evidence' linked to the Task Force Scenario's - Workshop topic #1: Definition of Storylines (High Level Scenarios)**

High level driver	Dimension	Characteristic	Storyline 1 (DE)	Storyline 2 (GA)	
Green transition	by 2030	Compliant with Green Deal (-50-55% GHG emissions)	Yes	Yes	
	by 2050	Reach carbon neutrality	Yes	Yes	
	EU Carbon Budget	Compliant with EU strategies (LTS)	Yes	Yes	
Driving force of the Transition	Initiative	Level of Decentralisation (Prosumer vs. Global)	Higher	Lower	
	Global Technology and Commodity Trade	Benefits from global synergies (sociatal acceptance and efficiencies)	Lower	Higher	
	Autonomy	Share of energy autarky	Higher	Lower	
Energy intensity	Residential and Tertiary	Behaviour: surface per person	Lower	Higher	
		Behaviour: share of homeoffice	Higher	Lower	
		Level of energy efficient consumer behaviour (lower room temperature)	Higher	Lower	
		Level of energy efficient consumer behaviour (electric appliances)	Higher	Lower	
		Level of renovation rate	Higher	Lower	
	Transport	Level of public/shared transport (occupation per car)	Higher	Lower	
		Number of traveled km per person (including vacation, trade and work)	Lower	Higher	
		Share of autonomous vehicles	Similar	Similar	
	Industry	Share of non-motorised transport	Higher	Lower	
		Growth of industry (on shoring, export)	Lower	Higher	
Raw materials and feedstock (focus on non-energy fuels)		Lower	Higher		
Data centres		Similar	Similar		
Energy technologies	Low Temperature Heat Demand	District heating (circularity)	Higher	Lower	
		Small scale gas boilers (households)	Similar	Similar	
		Small scale hybrid heat pumps (households)	Lower	Higher	
		Small scale all-electric heat pumps (households)	Higher	Lower	
		Small scale CHP incl. fuel cells (households)	Higher	Lower	
	Private transport	EV	Higher	Lower	
		FCEV	Lower	Higher	
	Heavy goods transport	EV	Higher	Lower	
		FCEV	Lower	Higher	
	Aviation and shipping	Compressed Methane Cars	Lower	Higher	
		Liquids (methane, hydrogen, bio or synthetic fuels)	Lower	Higher	
	Industry: high temperature heat	Electricity	Higher	Lower	
		Methane	Lower	Higher	
		Hydrogen	Lower	Higher	
		Electricity	Higher	Lower	
		CCS (all sources)	Lower	Higher	
	Carbon economy	Sector coupling	Share of P2X	Higher	Lower
			Solar-PV	Higher	Lower
		Electricity supply for direct electricity demand	Onshore wind	Higher	Lower
			Offshore wind	Lower	Higher
			(New) nuclear	Lower	Higher
			Small Scale CHP (including fuel cells)	Higher	Lower
			Large Scale CHP (including fuel cells)	Lower	Higher
			Concentrated Solar Power	Lower	Higher
		Electricity balancing	Thermal Generation	Similar	Similar
			DSR based on Smart Metering	Higher	Lower
	Flexible power to heat		Higher	Lower	
Batteries (behind the meter)	Higher		Lower		
Large scale electricy storage	Lower		Higher		
Smart charging	Higher		Lower		
P2x	Higher		Lower		

Additional information in the form of 'data – for – quantitative – ranges' can be found here



This data provides an indication, from a PAN-EU perspective, of the possible ranges that the notions 'Lower', 'Higher' and 'Similar' in the table could/might take.

## Call for evidence – Scope

### Call for Evidence:

- Do you see the necessity to create Belgian specific variants on the above TYNDP storylines **Distributed Energy** and/or **Global Ambition**?
- What are according to you the main drivers that could affect Belgium?
- Are those well captured by “*Green Transition*”, “*Driving force of the Transition*”, “*Energy intensity*”, “*Energy technologies*” as in the ‘Storyline Matrix’?

### **Possible update of the STORYLINE MATRIX for Belgium**

Stakeholders are welcome to provide any ‘evidence’, which could be used to **update** or **complete** the STORYLINE MATRIX presented above by providing specific information for Belgium. Concretely stakeholders could provide an updated version of the STORYLINE MATRIX excel table (*thus by editing the excel table directly and locally*) in which

- comments or modifications of the values in the table are provided with specific values more relevant for Belgium;
- any additional information or pertinent references to support or clarify such a modification is provided.

In any case stakeholders should provide enough evidence in order to quantify their proposed variants and explain the interlinkage and reasoning behind the choices made. A scenario or a variant should be coherent.

*Stakeholders will be invited to present their evidence at the planned Workshop #1.*

### **Possible extension of STORYLINE MATRIX for Belgium**

Stakeholders are welcome to provide any ‘evidence’, which could be used to **extend** the STORYLINE MATRIX above presented and provide additional specific information for Belgium. Concretely, stakeholders could add columns or rows to *their local copy* the STORYLINE MATRIX excel file hence providing an alternative updated version of the excel table in which

- New ‘storylines’, ‘drivers’ or ‘characteristics’ (indicative or concrete values) are provided; specific values relevant for Belgium are thus welcome.
- any additional information or pertinent references to support or clarify such a modification is provided

In any case stakeholders should provide enough evidence in order to quantify their proposed variants.

*Stakeholders will be invited to present their evidence at the planned Workshop #1.*

## Call for evidence – Guidance

Any ‘Storyline’ can be understood as a combination of a ‘Future’ + ‘Strategy’



## Uncertainties and Futures



As guiding framework, stakeholders can present evidence in the form of relevant 'Uncertainties'. The structure below (non-exhaustive) is provided as guidance when updating the STORYLINE MATRIX excel

### Uncertainties

#### Technical

- Technology cost
- Fuel cost, efficiency, demand

#### Economic/Financial

- Economic growth
- Investors' appetite

#### Political/Social/Environmental

- Public acceptance
- Climate policy & ambitions

#### Research & Development

- R&D funding
- Innovation, maturity

## Options and Strategies



As guiding framework, stakeholders can present evidence in the form of relevant 'Options'. The structure below (non-exhaustive) is provided as guidance when updating the STORYLINE MATRIX excel

### Options / Choices

#### Technical

- RES potential; NUC, COAL, GAS capacity

#### Economic/Financial

- EOM, CRM,
- Subsidies, Support schemes

#### Political/Social/Environmental

- Regulations (phase outs,..)
- Standards

#### Research & Development

- Offshore wind, PV, Biomass
- V2G, P2X, Storage...