PLAN.
INNOVATE.
ENGAGE.

Introductory plenary session

Dynamic Modelling Energy Pathways

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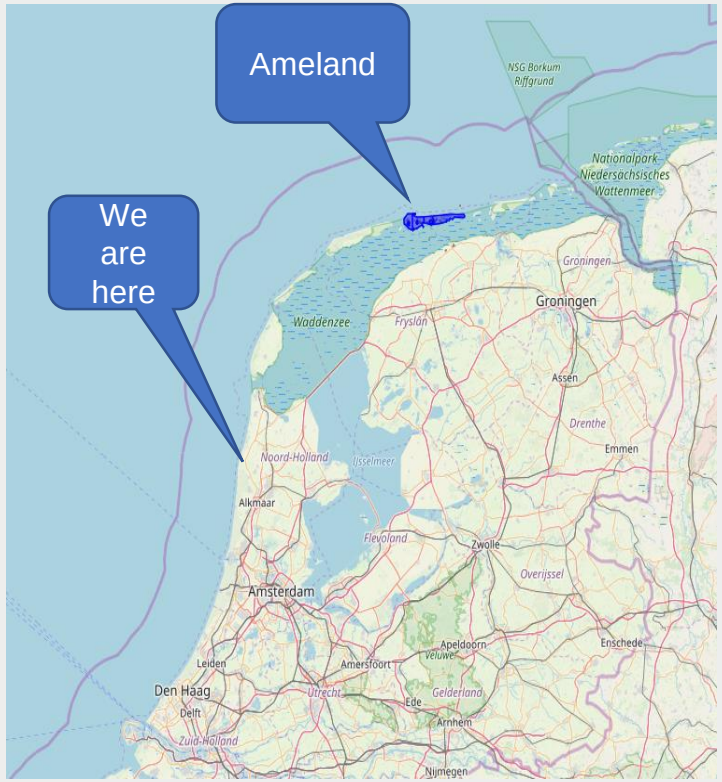
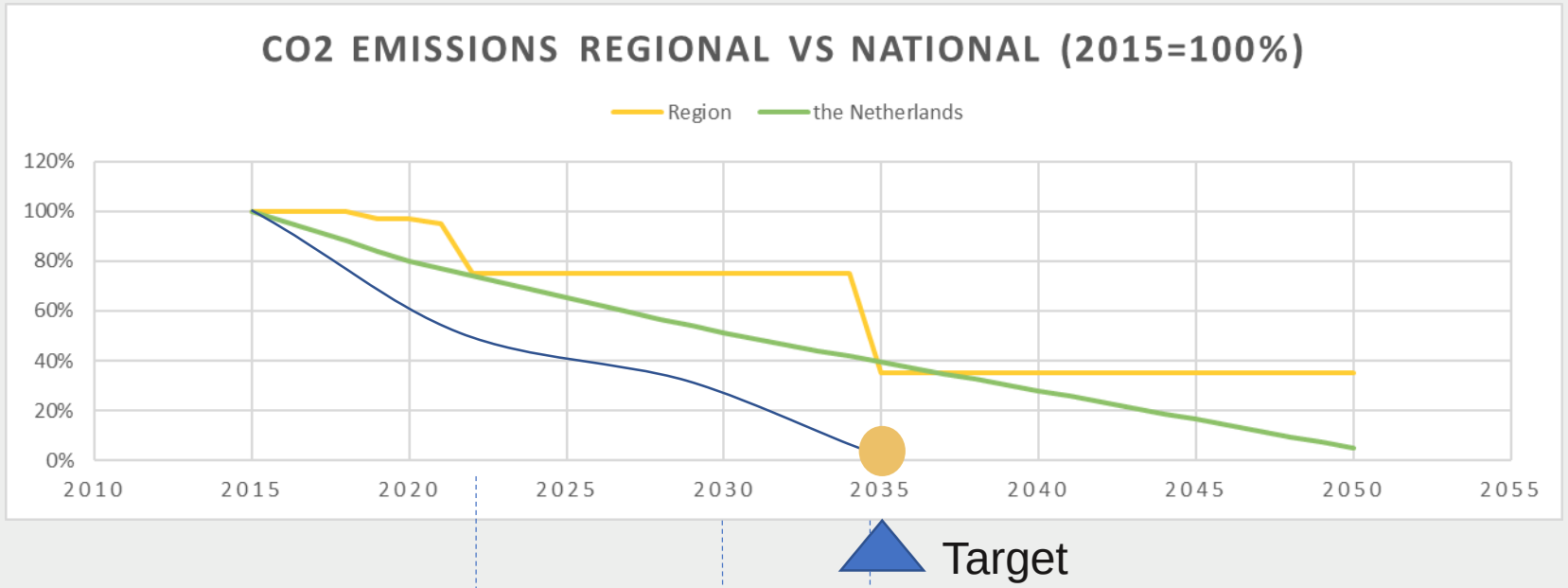
Manage the regional transition over time

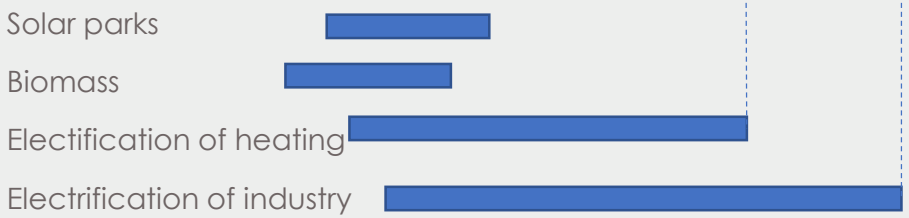
CASE :	Dutch Island, 3500 inhabitants, tourism, onshore and nearshore gas production
Partners:	Local government, DSO, utility, gas production company, local energy cooperation
Ambition:	Reduce CO2 footprint to zero by 2035
Challenge:	Electrification of industry, local renewable sources, connection to the mainland, system integration



Insight CO_2 reductions in timeline



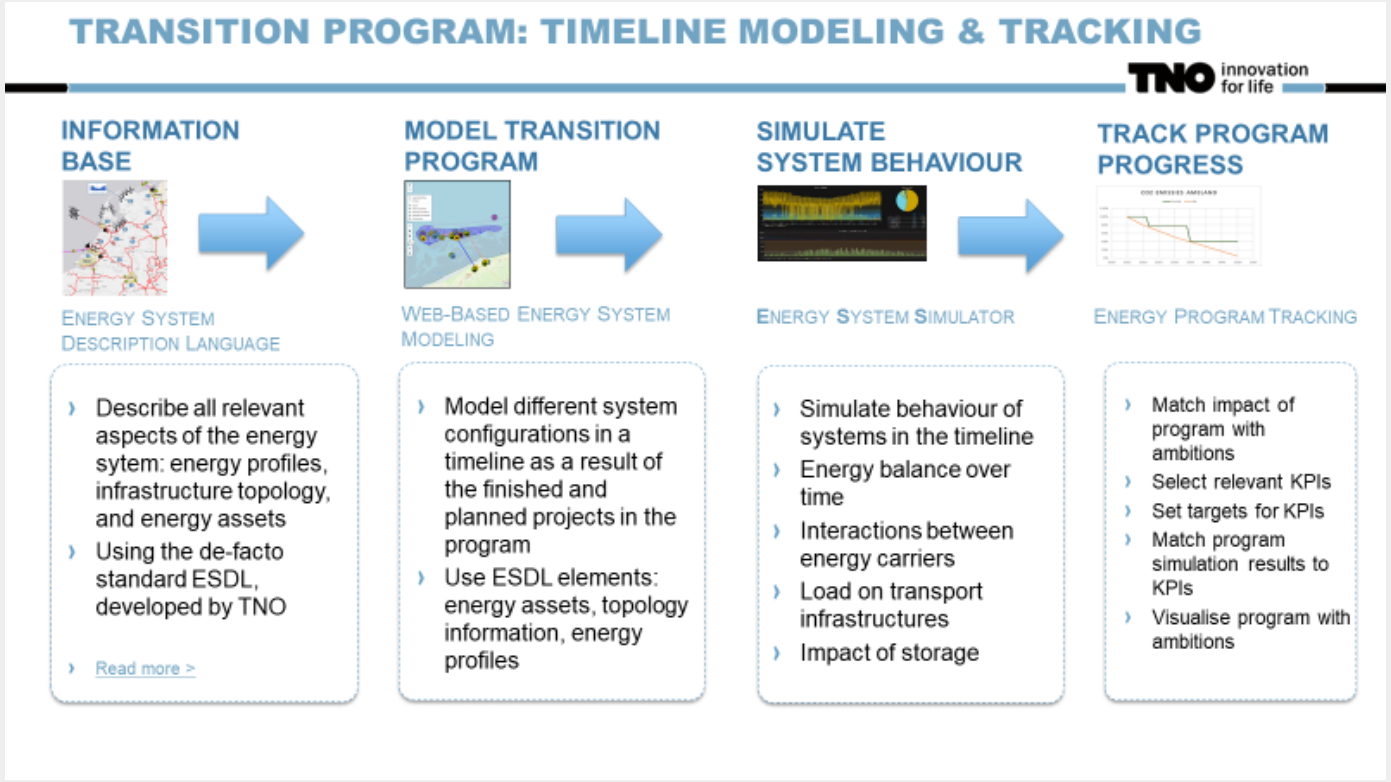
Projects



Objectives:

Map **effect** of transition projects onto CO2 ambitions of the island in the timeframe to 2050

Key exploitable results addressing energy system integration



ESDL

Language developed for uniform definition of energy system: ESDL

GEO-MAPEDITOR

Interactive Geographic interface to define energy systems: topology, assets, profiles, sectors

ESSIM

Profile based energy system simulator over multiple energy vectors and infrastructures

TRACKING and TRACING

Translate simulation results to KPI's on energy, environment, finances and social impact

Lessons learned and barriers to innovation deployment

Key success factors for steps in the transition

- factual insight in certain KPI's (co2, costs) are required for sound decision making
- factual insight in the effect of scenario choices helps to manage the transition
- projects should result in sustainable businesses and business models

Barriers

- Barriers in regulation are often imagined
- Regulation should help to stimulate the transition in a certain direction
- Sustainable business models without subsidies are still scarce

Deployment prospects of the most promising solutions

- The approach (ESDL, MAPEDITOR, ESSIM and KPI calculations) is applicable to a wide scale of regions
  - Going from scenario development to infrastructure impact and KPI quantification
  - Applicable in Dutch Regional Energy Strategies (RES)

- Tools are made available
  - ESDL is open source : available on GitHub
  - Simulation tools will become available via TNO partners

Needs for future R&I activities coming out of the project

- Broader validation of the approach, also internationally

  - validation of KPI's
  - enhance tooling for KPI calculation

- H2020: energy islands / geographical islands calls