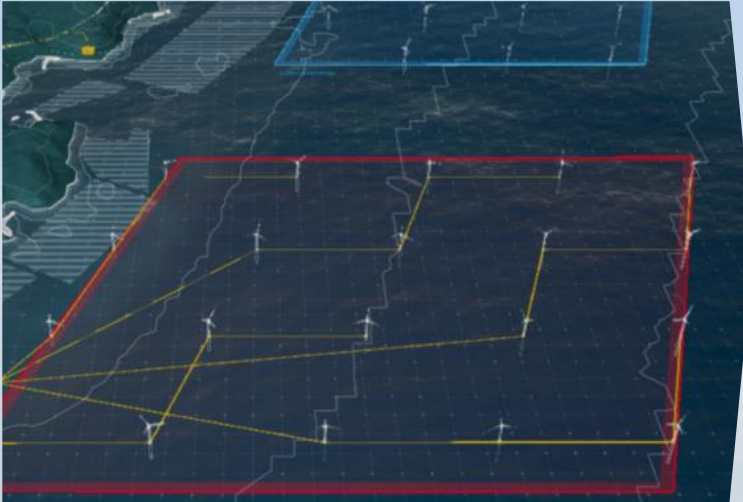




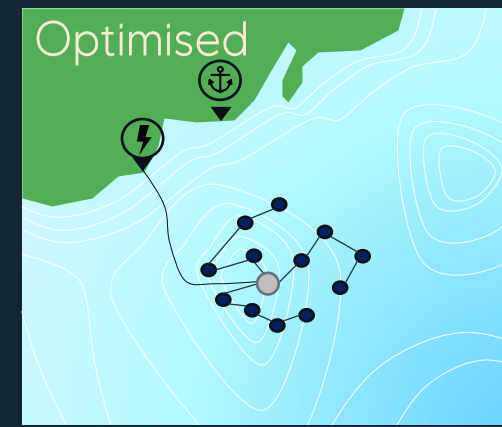
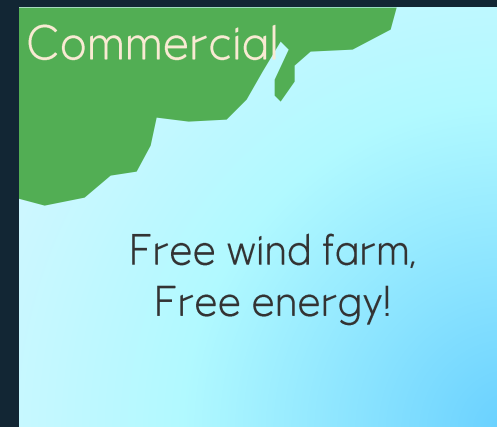
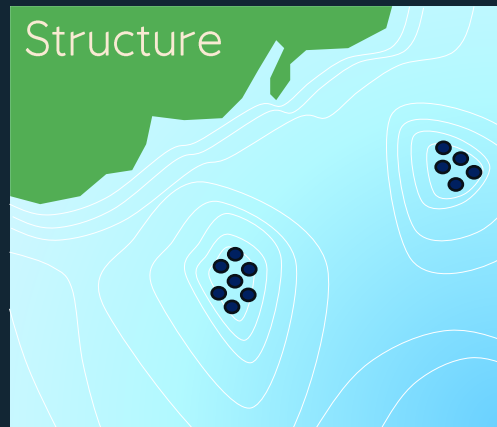
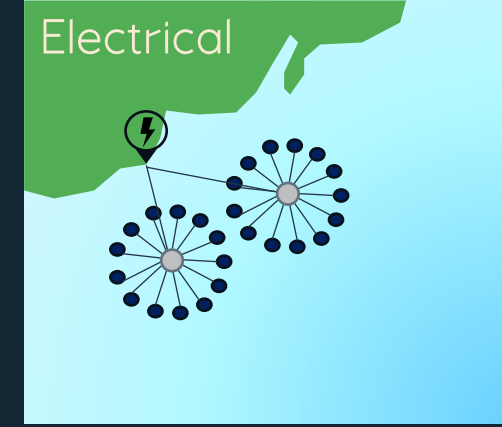
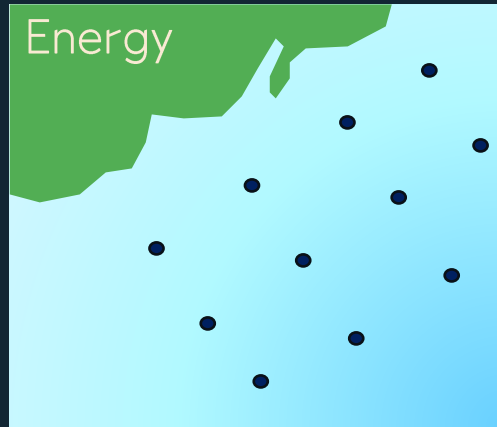
Radical acceleration of digital transformation in offshore wind

EERA DeepWind conference - January 2025

Objective

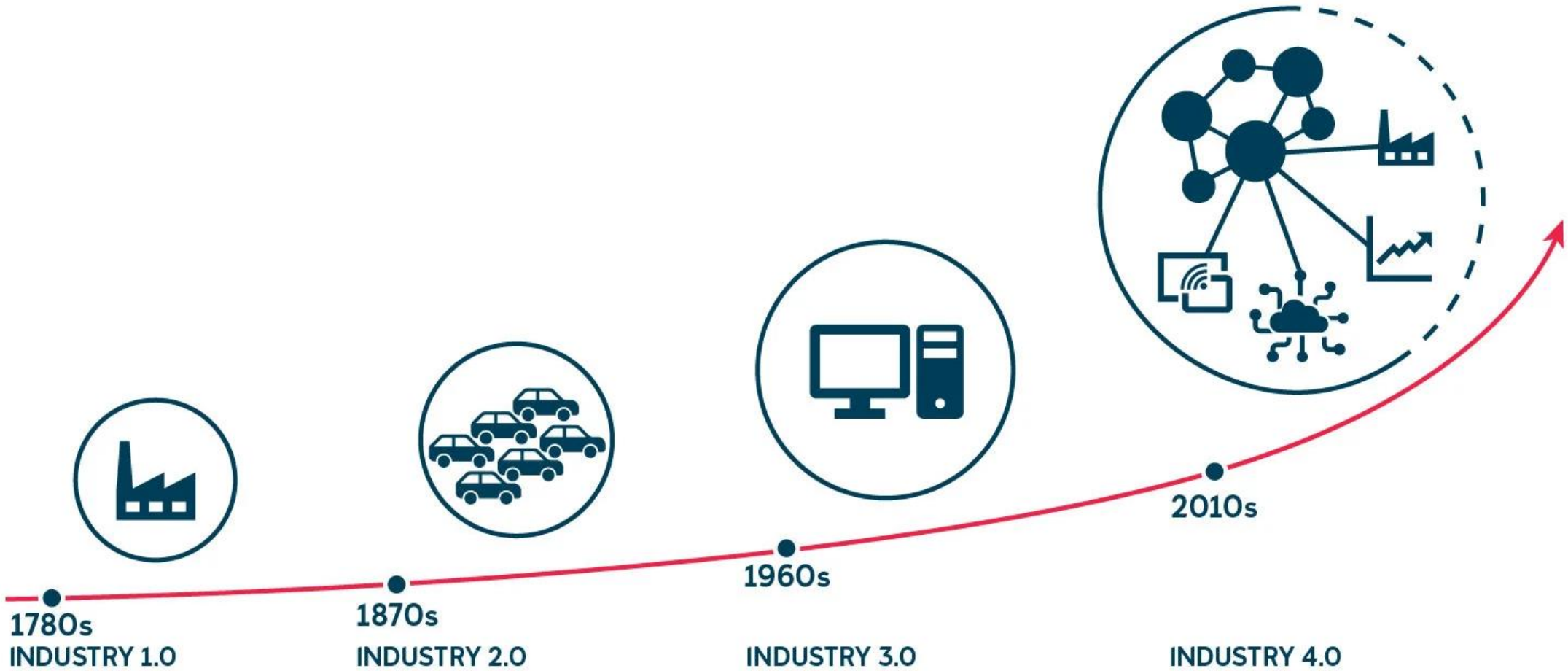


Problem



Source: Inspired by Wind energy series 01/2022, posted by Sebastian Sanchez Perez-Moreno on LinkedIn

The industrial revolutions



Key blockers



Quality - data not maintained



Precision - data definition not business driven



Velocity - slow and costly digital development



Interoperability - data locked into discipline tools



Agility - unable to adapt to emerging industry standards



Data as a product



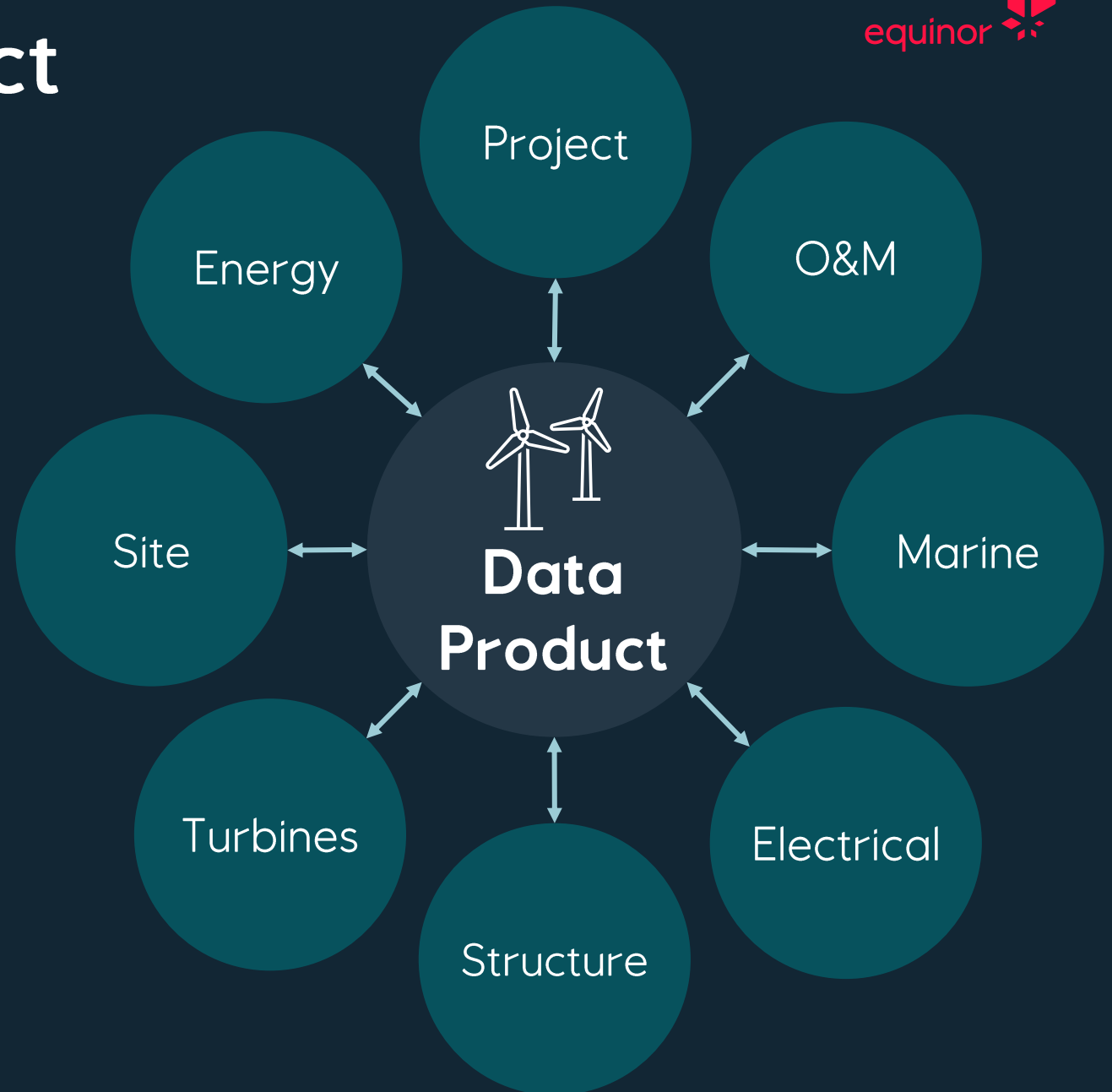
Classified



Managed



Available








Oasis – A data product solution



Oasis

Send feedback   









Oasis

Master & Reference data


Oasis is the one stop shop for APIs related to REN.
To access them, search for [OASIS in AccessIT](#).
Keep updated on news from the team at our [SharePoint site](#).

Search Show catalogs in Beta

Official

-  Cable type
-  Energy production estimate
-  Estman
-  PL Product
-  Project master
-  Turbine
-  Wind resource assessment
-  Wtg layout

Beta



OFFICIAL CATALOG

Turbine

[View catalog](#)

Description

The Wind Turbine Generator (WTG) Catalog contains technical and performance information about internal WTG models forecasted by Equinor and external WTG models available in the market.

Resources

API documentation Swagger →	Data structure Genesis →	Access control AccessIt →	Data product governance Collibra →
--	---	--	---

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Genesis – business driven definition



Genesis Official Please save the file Download Files Save New schema Send feedback ?

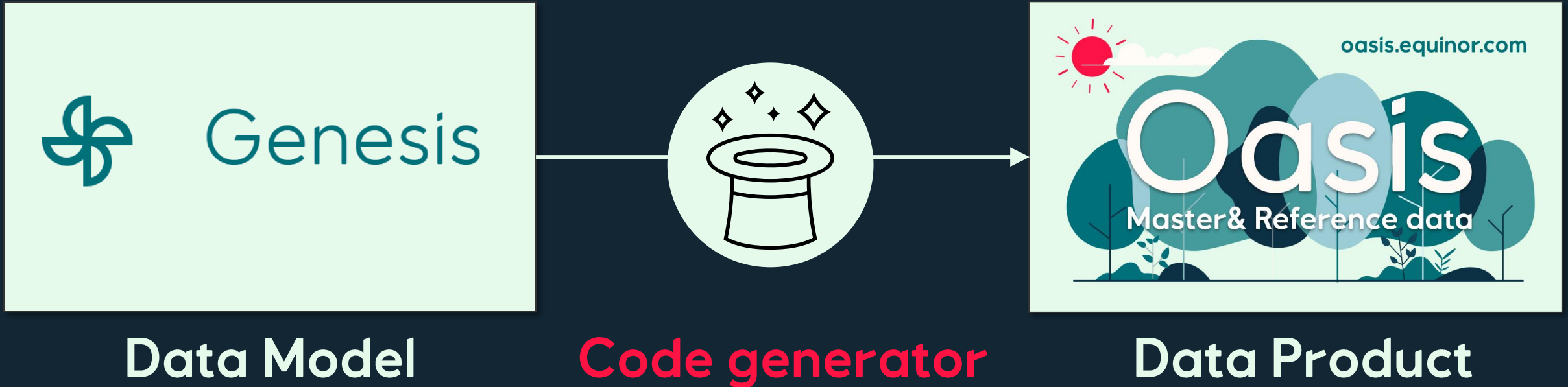
Model Properties Categories Lists Rows Columns

Turbine Category Property List Column

- General
 - Name
 - Description
 - Manufacturer
 - DateAvailable
 - Designlife
 - DesignHubHeight
 - TopHeadMass
 - SwitchgearLocation
 - Drivetrain
- Rotor
 - RotorDiameter
 - BladeLength
 - BladeMass
 - TipSpeedMax
- Tower
 - TowerConfigurations
 - TowerName
 - TowerWeight
 - TowerLength
 - TowerSections
 - TowerBottomFlangeDiameter
 - TowerComment
- Transformer
 - RatedPower
 - NominalFrequency
 - PrimaryRatedVoltage
 - PrimaryRatedVoltageAlternative
 - SecondaryRatedVoltage
 - VectorGroup
 - PositiveSequenceImpedance
 - ZeroSequenceImpedance
 - CopperLoss
 - NoLoadLoss
 - NoLoadCurrent
- ReferenceData
 - ReferenceWindFarm
 - GrossProduction
 - GrossProductionPercent



Data product in minutes





Data product in minutes

Genesis



oasis.equinor.com

Oasis

Master & Production data

DetailedResults

- ResultSummary
 - GrossAep
 - TotalEstimatedLossesFullAvailability
 - ExpectedAepFullAvailability
 - TotalEstimatedLossesActAvailability
 - ExpectedAepActAvailability
 - CapacityFactorActAvailability

```

"ProductionEstimateV2ResultSummary": {
  "DisplayName": "Result summary",
  "Properties": {
    "GrossAep": {
      "Type": "double",
      "DisplayName": "Gross AEP",
      "Description": "Long-term average",
      "Unit": "GWh/y",
      "Example": "1855.5",
      "Validation": {
        "Minimum": "100",
        "Maximum": "50000"
      }
    }
  }
}

```

Expand all

Site conditions

Description
Long-term average Annual Energy Production (AEP) without consideration of any losses. The Gross AEP of a single turbine is solely a combination of the power curve of that WTG and the local wind climate at that WTG position.

Example value
1855.5 GWh/y

Gross AEP 342.64 GWh/y

Expected AEP actual availability 302.82 GWh/y

Yearly production

Year 1979





Enabling interoperability

Oasis REST API

Turbines	
GET	/odata/Turbines
POST	/PowerCurveCatalog/DateUpdates
GET	/TurbineCatalog/Drafts
POST	/TurbineCatalog/EarlyPhaseCaseTransfer
POST	/TurbineCatalog/Excel
GET	/TurbineCatalog/Excel
GET	/TurbineCatalog/ExcelTemplate
GET	/TurbineCatalog/Revisions
POST	/TurbineCatalog/Watchlists
DELETE	/TurbineCatalog/Watchlists
GET	/TurbineCatalog/Watchlists
GET	/Turbines
POST	/Turbines
GET	/Turbines/{Id}



Product vendors



Prospect assessment



Reporting



Design and construction



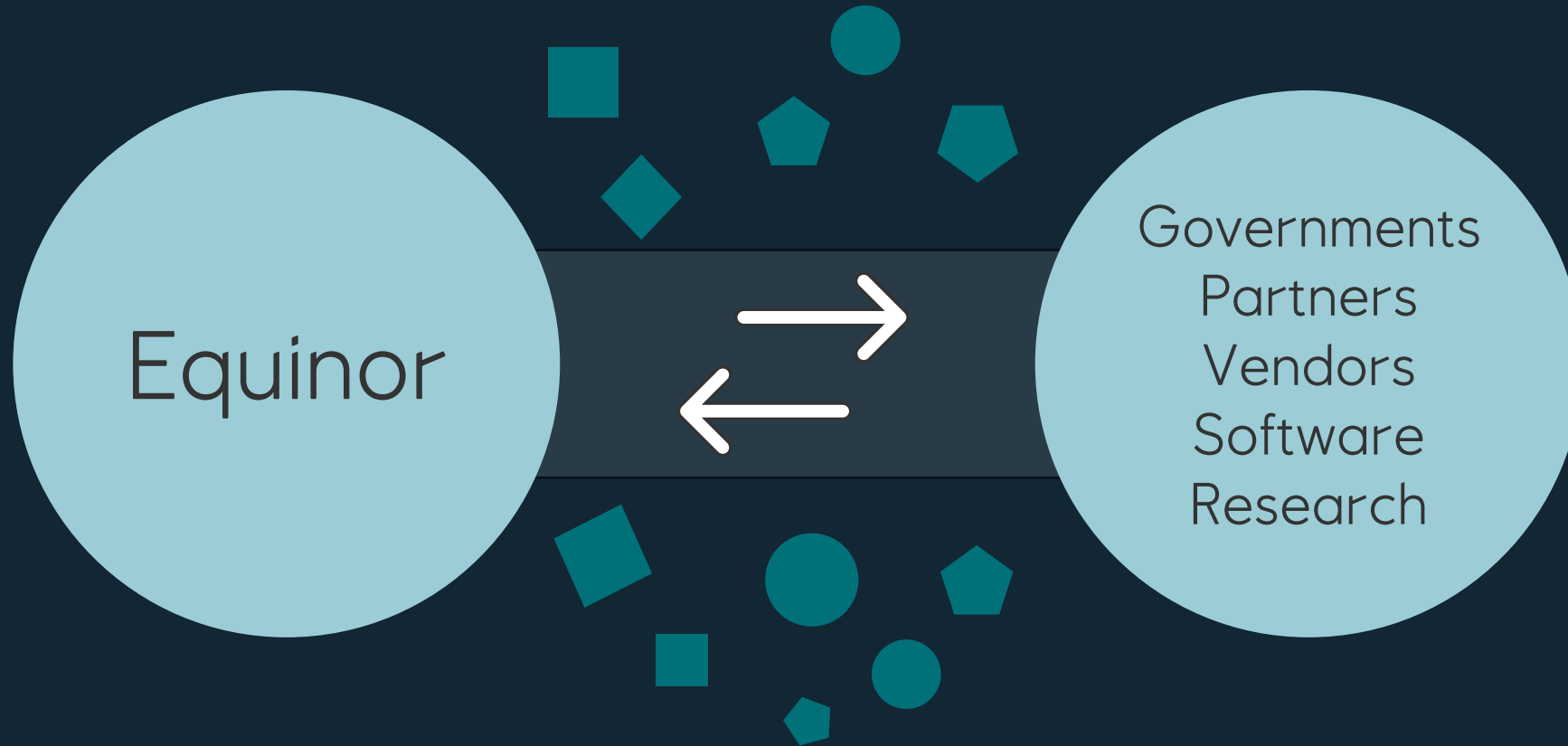
Insights



Operations & Maintenance



Adapt to emerging industry standards



Energy yield assessment & electrical design

PREVIOUS CHALLENGES



Data Collection



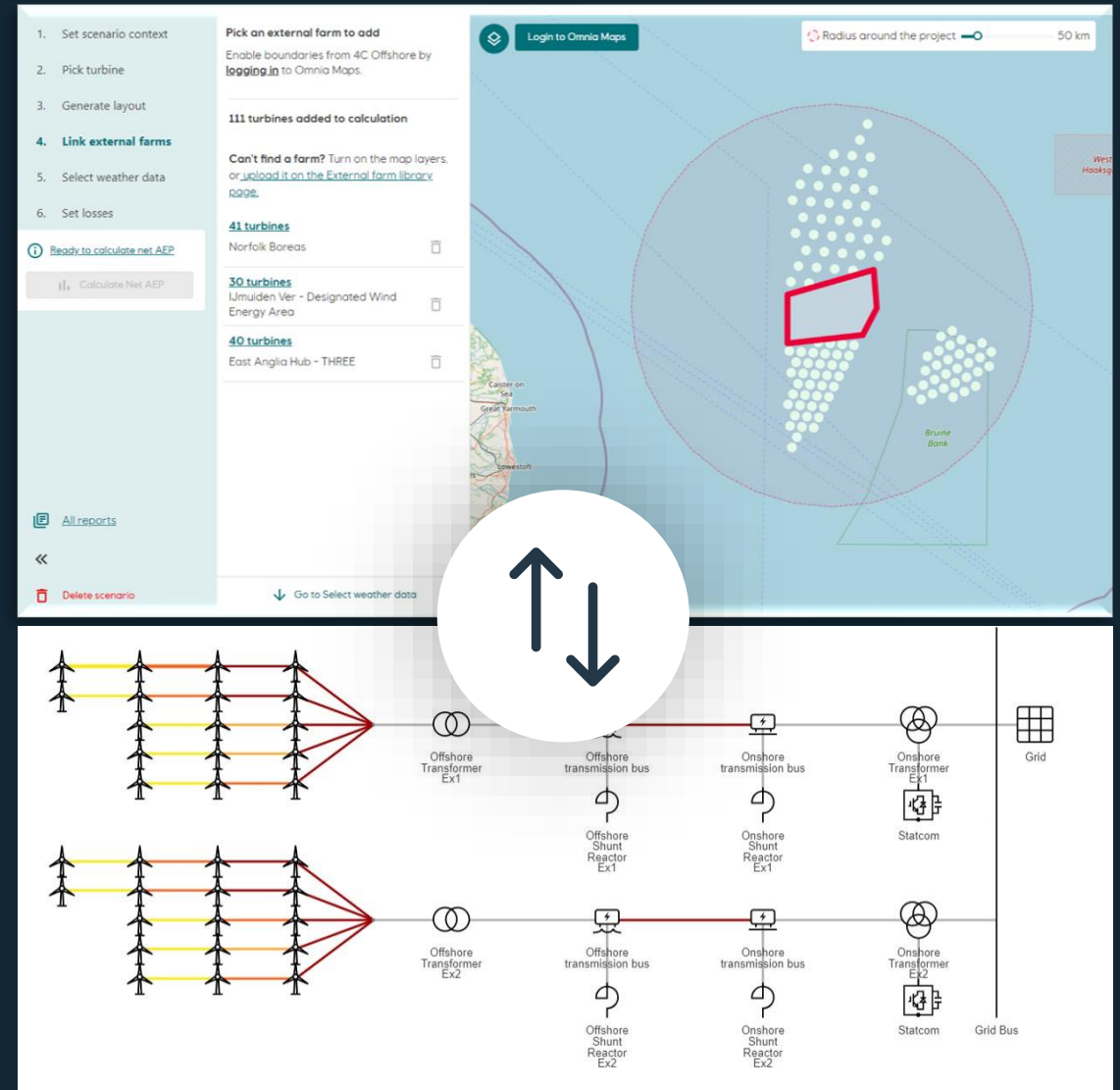
Modelling and optimization



Systematic learning

RESULT

- Multi-discipline integration through data products
- Data collection and simulations – from weeks to hours



Way forward

 **Integrate** across Equinor value chains

 **Drive** and adopt to industry standards

 **Explore** AI and continue building digital culture

Radical acceleration of digital transformation in offshore wind

Øystein Hult & Elin Nordmark Blegen

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