RYSTAD ENERGY

MAP DATA DISTRIBUTION OVER GIS SERVICES AND THEIR PRESENTATION IN ARCGIS ONLINE

2021 ESRI USER CONFERENCE

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STEPHAN NYSVEEN – JULY 2021

Abstract

The GIS team in Rystad Energy manages global map data from the energy sector. This paper will present how we have succeeded to streamline the process from data updates, through service synchronization in a cloud to distribution and visualization in ArcGIS Web App, StoryMaps and Dashboards. All deployment is based on ESRI technology, such as ArcGIS Pro, Data Interoperability extension, ArcGIS Online, REST services, Web App Builder, StoryMaps and Dashboards.

Objective

- Importance of spatial data and maps in company’s business
- Use case scenario of deploying and using GIS technology
- Plans

Rystad Energy

Independent energy research and business intelligence company providing data, tools, analytics and consultancy services to clients exposed to the energy industry across the globe.

Delivery channels

Data

"Fit for purpose" solutions.
Data feeds, dashboards, GIS services and our proprietary Cube Browser

Analytics

An ever-evolving A-Z library of the energy sector - comprising of reports, daily commentaries and factsheets

Advisory

Bespoke and customized consulting engagements

Energy Themes

Supply Chain

Demand and supply of the different service segments across all energy sectors, in terms of **units, spend & revenue.**

Renewables & Power

Full coverage of **wind, solar and energy storage**, combined with our view on the future power mix and associated energy sources.

Oil & Gas

Complete **reconciliation of activity, economics & ownership** within the global oil & gas industry.

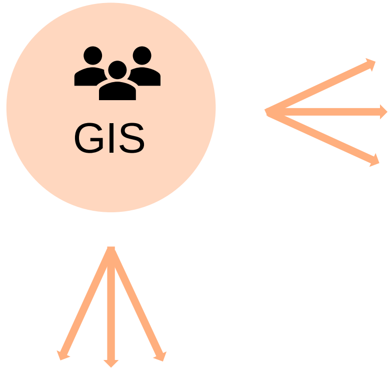
Commodity Markets

Delivering in-depth **data and analysis** of the global oil and gas markets and their key drivers.

Energy Transition

Providing **independent and fact-based perspectives** of how our energy systems are evolving.

GIS team



Energy Themes

Oil & Gas | Commodity Markets | Renewables & Power | Energy Transition | Supply Chain

- Fields and discoveries
- Active licenses
- Upcoming block awards
  - Open for bidding
  - Bids under evaluation
  - Planned
  - Open door
  - Bidding concluded
  - Cancelled/suspended
- Blocks
- NCS BD Atlas maps
  - NCS BD Atlas comments
  - NCS BD Atlas discoveries and prospects
  - NPD additional layers
- UKCS BD Atlas maps
  - UKCS BD Atlas comments
  - UKCS BD Atlas discoveries and prospects

- Geology
  - Wells
  - Sediment thickness (Laske)
  - Major continental faults
  - Structural elements/basins
  - Structural elements/sub-bas
  - Structural elements/basins b
  - Assessment units (USGS)
  - Geoprovinces (USGS)
  - Global source rocks
  - Global source rocks by age
  - Global shale plays
  - Groundwater gas detection
  - Geological maps
- Climate palette
  - Climate hazards
  - Koeppen-Geiger climate classificati

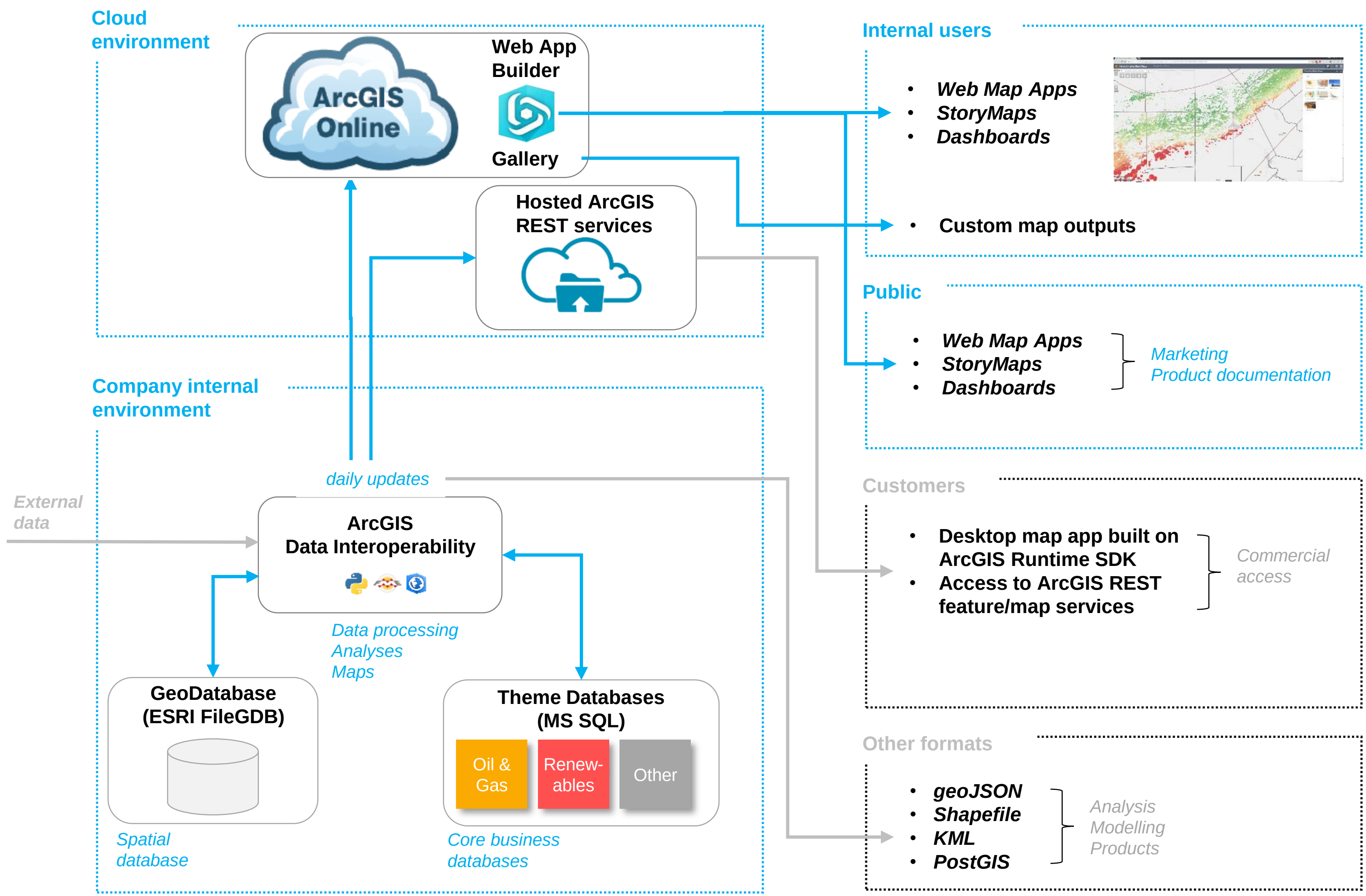
- Infrastructure
  - LNG import terminals
  - LNG export terminals
  - Oil refineries
  - Ports
  - Supply bases
  - Oil pipelines
  - Gas pipelines
  - Texas pipelines
    - Transmission & distribution pipelines
    - Gathering pipelines
- Seismic multiclient libraries
  - 2D detail surveys by contractor
  - 2D outlines by contractor
  - 3D surveys by contractor
- Wind Cube maps

- Shale maps
  - Shale plays outlines
  - North American basins
  - North American sub-basins
  - Alberta Bakken Shale
  - Bakken Shale
    - Wellbore laterals
    - Bakken Shale acreage (all operators)
    - Bakken Shale acreage (split by segments)
    - Bakken Shale acreage
    - Bakken Shale geology
  - Barnett Shale
  - Cardium Play
  - Duvernay Shale
  - Eagle Ford Shale
  - Fayetteville Shale
  - Haynesville-Bossier Shale

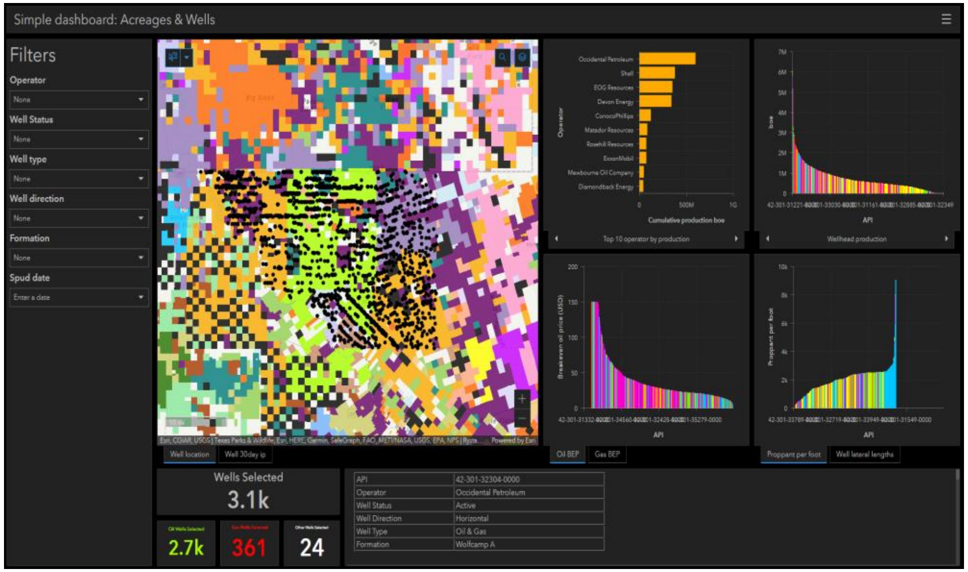
- Renewables resource
  - Global
    - Suitable areas for solar project development
    - Solar Index Heat Map
    - Onshore Wind Index Heat Map
    - Global horizontal irradiation (kWh/m2)
  - United States
    - United States - Global irradiation at optimum tilt (kWh/m2)
  - Australia
    - Australia - Mean horizontal exposure MJ/(m^2*d)
    - Australia - Average wind speed at 150 m
  - Electricity network
    - Australia
      - Australia - transmission substations
      - Australia - transmission power lines
      - Australia - distribution substations
      - Australia - distribution power lines

And many more …

Company GIS System Architecture



Samples



Web app map

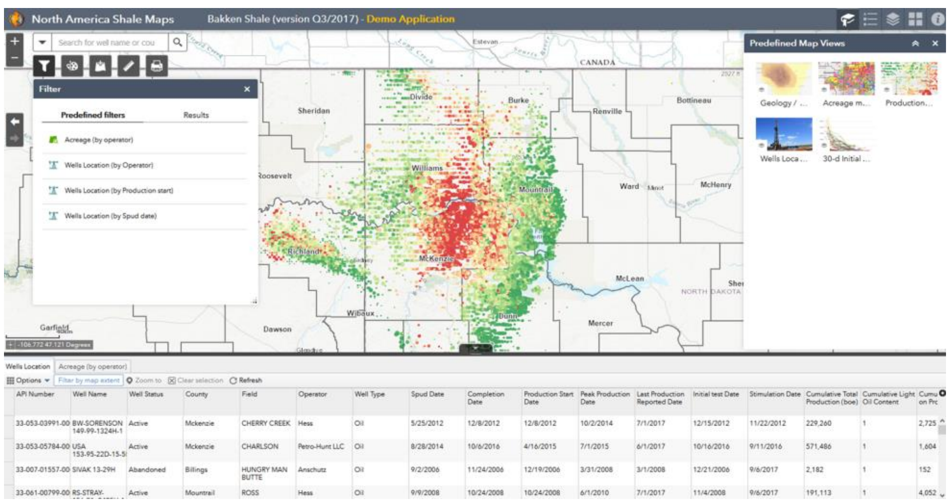
https://re.maps.arcgis.com/apps/webappviewer/index.html?id=bc4406faf9a34c1f9569a1172afbe48d

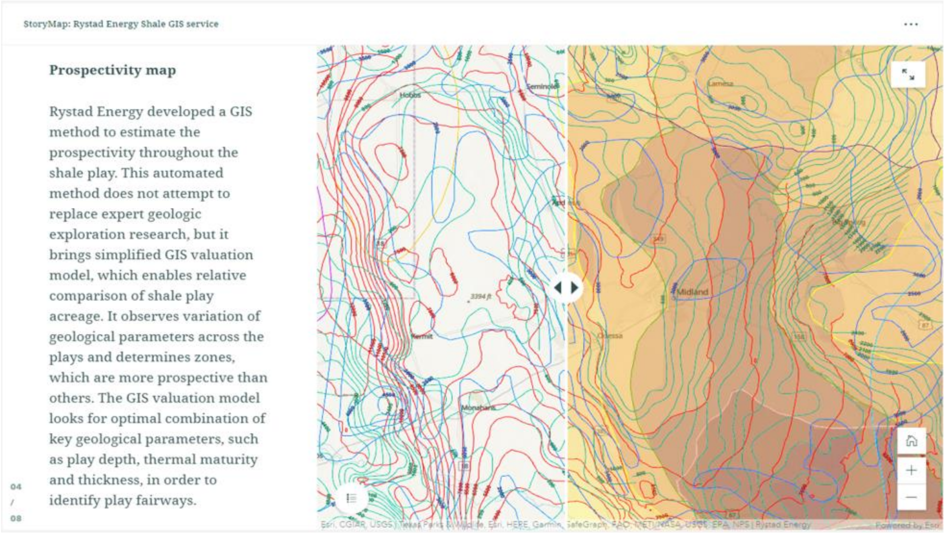
Dashboards

https://re.maps.arcgis.com/apps/dashboards/37e7baabb0d04414b5abc637efe4483c

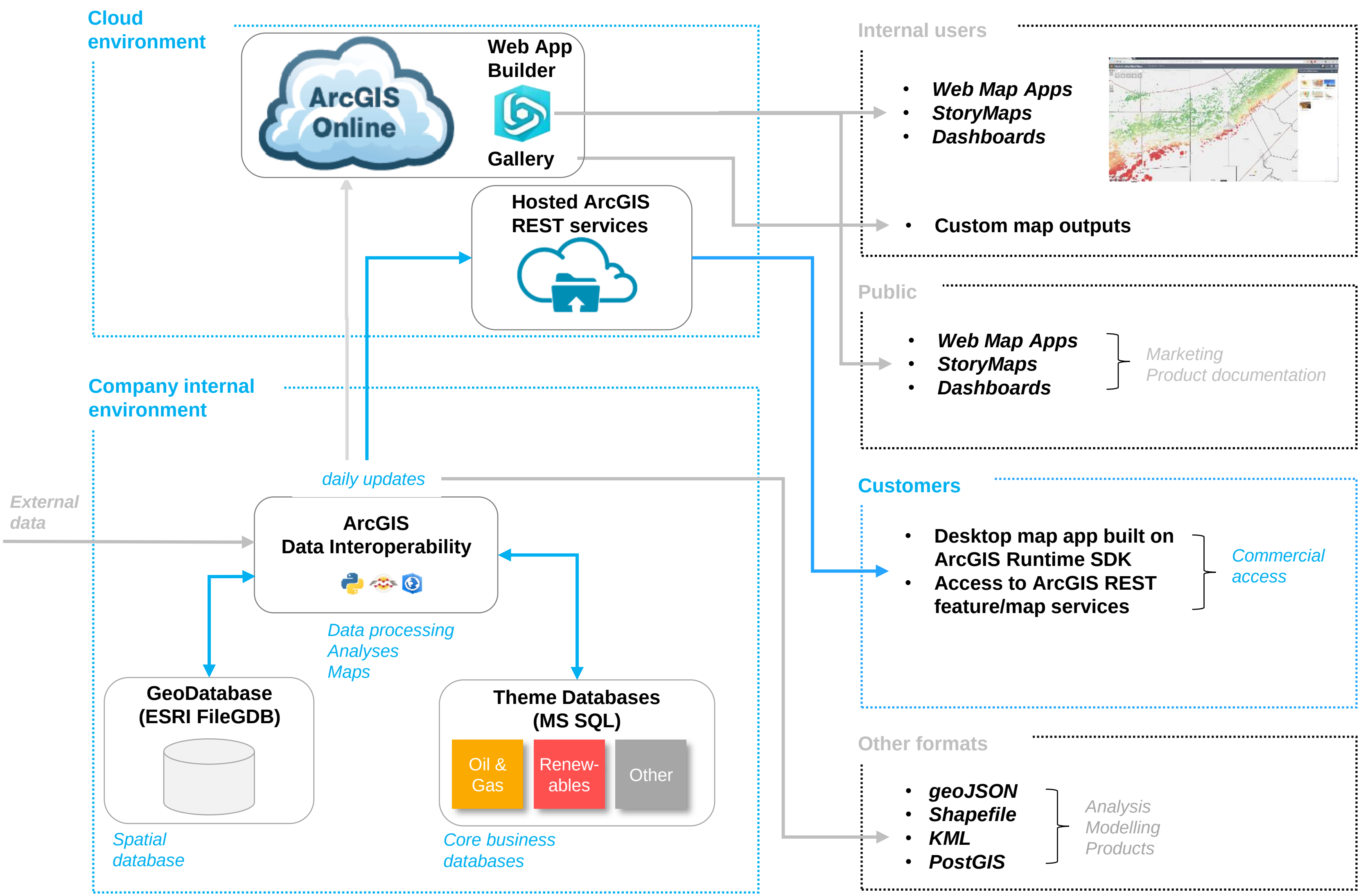
Storymap

https://storymaps.arcgis.com/stories/a6d5c65542f8472eafd3d79df8f67552

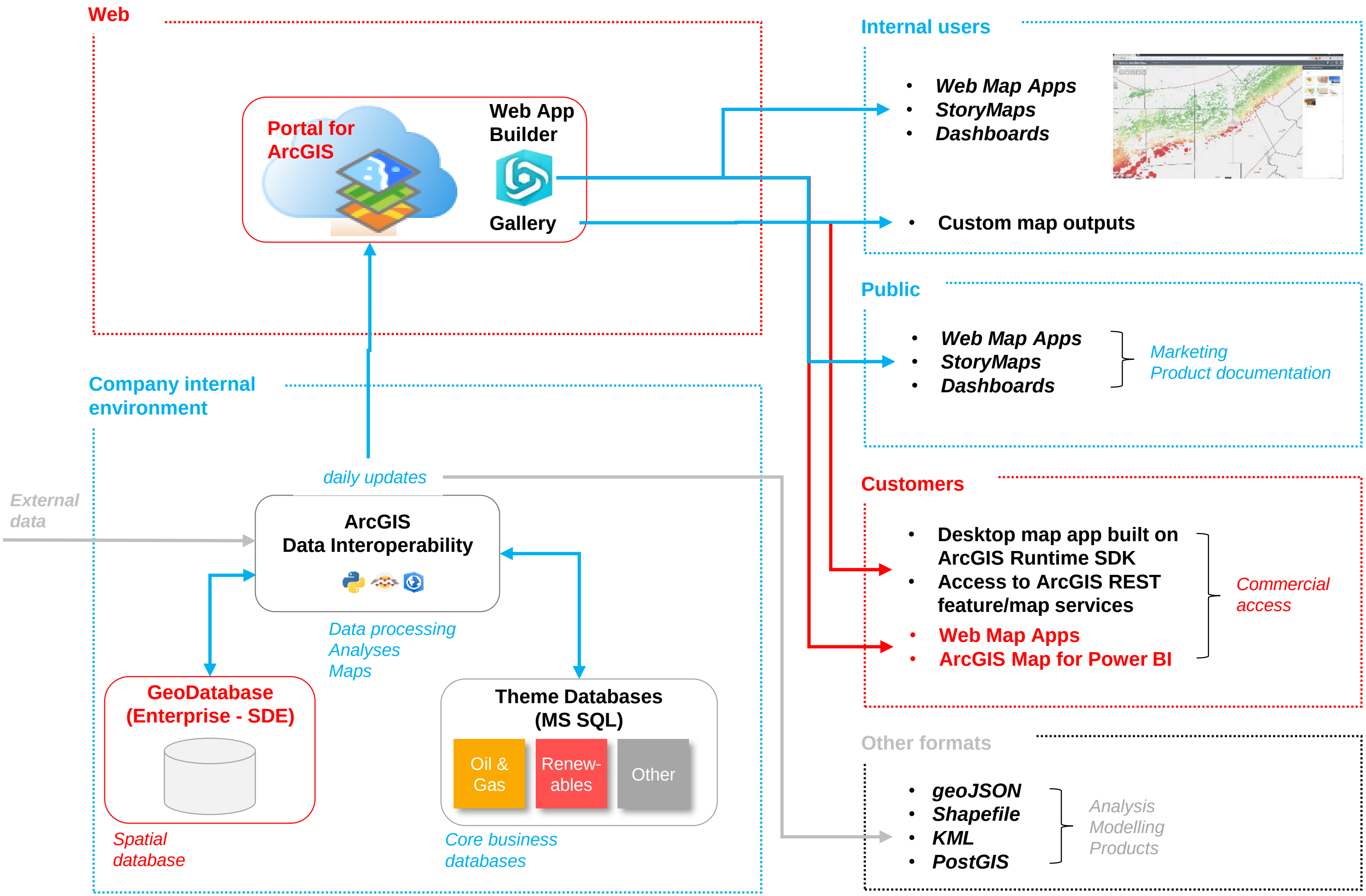




Company GIS System Architecture



Plans – transition to ArcGIS Enterprise



RYSTAD ENERGY

Rystad Energy is an independent energy consulting services and business intelligence data firm offering global databases, strategy advisory and research products for energy companies and suppliers, investors, investment banks, organizations, and governments. Rystad Energy's headquarters are located in Oslo, Norway.

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