Supporting Decision Making in the Energy Sector with ArcGIS Online and Operations Dashboard

5th Ugandan Energy Sector GIS Workshop

Presentation Outline

- Why should we use Web GIS and publish our maps and tools online?
- Platforms for sharing GIS maps and tools
- Filtering data and Analysis Methods in ArcGIS Online
- Using the Operations Dashboard for Decision Making
Why should we use Web GIS and publish our maps and tools online?

- Today’s maps need to be current and able to change fast
- GIS data can be used by the whole organisation
- Even Non-GIS staff can do queries and simple analysis
- Improve internal and external communications
- Improve work transparency
- Web maps can be accessed remotely from any device
- Allow others to create new products and business ideas with your data e.g. Uber is using Google Maps
- Real-time spatial analysis is possible
Flightradar24: Example for a real time web GIS application

https://www.flightradar24.com
Web Mapping Platforms: **ArcGIS Online**

**Pros**

- Very good integration with ArcGIS Desktop and other Esri Tools
- Good support and big community
- Easy to use, no coding required
- Many Templates and Styles available
- Online Analysis and Data Queries possible
- Online Editing of the data possible
- Publishing of GIS data as Open Data possible

**Cons**

- Yearly subscription quite costly and pricing is not transparent
- Basemaps not as beautiful as e.g. MapBox
Web Mapping Platforms: **ArcGIS Online**
Web Mapping Platforms: CartoDB

Pros
- for free at a basic usage
- Pricing of higher levels is transparent
- new and fresh design
- great style customization through css
- Video tutorials available
- Import of tables is easy

Cons
- limited statistic features
- no easy labelling for points
- CSS requires some web design knowledge
Web Mapping Platforms: **CartoDB**
Web Mapping Platforms: **Mapbox**

**Pros**
- Beautiful basemaps
- Great for designers (Mapbox Studio, tilemill creator, etc.)
- Great for developers (API, js libraries, etc.)

**Cons**
- Difficult to work with
- Limited import possibilities
- No basic data storage
- No Online Analysis
Web Mapping Platforms: Mapbox
Filtering Data in ArcGIS Online
## GIS Analysis in ArcGIS Online

<table>
<thead>
<tr>
<th>Operation</th>
<th>Image 1</th>
<th>Image 2</th>
<th>Image 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create Buffers</td>
<td><img src="image1.jpg" alt="Image" /></td>
<td><img src="image2.jpg" alt="Image" /></td>
<td><img src="image3.jpg" alt="Image" /></td>
</tr>
<tr>
<td>Plan Routes</td>
<td><img src="image4.jpg" alt="Image" /></td>
<td><img src="image5.jpg" alt="Image" /></td>
<td></td>
</tr>
<tr>
<td>Calculate Density</td>
<td><img src="image6.jpg" alt="Image" /></td>
<td><img src="image7.jpg" alt="Image" /></td>
<td><img src="image8.jpg" alt="Image" /></td>
</tr>
<tr>
<td>Dissolve Boundaries</td>
<td><img src="image9.jpg" alt="Image" /></td>
<td><img src="image10.jpg" alt="Image" /></td>
<td></td>
</tr>
<tr>
<td>Find Hot Spots</td>
<td><img src="image11.jpg" alt="Image" /></td>
<td><img src="image12.jpg" alt="Image" /></td>
<td><img src="image13.jpg" alt="Image" /></td>
</tr>
<tr>
<td>Merge Layers</td>
<td><img src="image14.jpg" alt="Image" /></td>
<td><img src="image15.jpg" alt="Image" /></td>
<td><img src="image16.jpg" alt="Image" /></td>
</tr>
</tbody>
</table>
ArcGIS Online Live Demonstration
Supporting Decision Making with **Operations Dashboard**

Monitor, Track and Assess Your Operations and Assets

**Capacity:** 824.33 MW

**Length:** 1,285.7 km

**Length:** 2,917.6 km
Operations Dashboard

Features

- Windows- and browser-based application
- Create executive dashboards that integrate maps, lists, charts, and gauges for real-time operation views.
- Use interactive maps with dynamic data sources that update automatically as underlying information changes.
- New widgets and map tools can be added using the ArcGIS API for JavaScript
ArcGIS Open Data

- ArcGIS Online provides a preconfigured open data platform
- You can set user rights for each dataset individually
- User can download the full dataset or data for specific areas
Open Data Site of the Energy Sector GIS Working Group

http://data.energy-gis.opendata.arcgis.com/