

Reducing risk in complex projects

Mainstream Renewable Power

The Challenge

- Reduce the risk associated with complex projects
- Improve the efficiency of global project management

The Benefits

- Less risk from better planning, collaboration and project management
- 40% time saving, leading to accelerated projects



The Customer

Mainstream Renewable Power develops large-scale wind and solar farms on behalf of, or in partnership with, large corporations, major utilities and institutional investors. Headquartered in Dublin, Ireland, the organisation operates from eleven offices, in eight countries across Europe, North America and Africa.

The Challenge

Designing, locating and building wind and solar energy plants is a highly complex business, fraught with risk. Many hundreds of factors have to be considered in determining the best locations for new facilities, and planning applications can take years to reach a successful outcome. Construction processes too are highly complicated, involving many different specialist organisations. Mainstream wanted to find a better way to manage this complexity and minimise project risk.

At the same time, Mainstream wanted to improve the efficiency of its business, so that it could deliver projects for its clients more quickly. It had over 150 employees who regularly worked with 450 partners and suppliers. To improve collaboration between these disparate teams, Mainstream needed a way to better manage all of its data assets and make project information readily accessible to people working on three different continents.

Mainstream's data assets are vast. Every project it undertakes relies heavily on vast pools of information about everything from geology and meteorological patterns to plant species and bird migrations. In Europe, the organisation primarily works in the field of off-shore wind farms, and data sets associated with marine environments are particularly complex, because the sea bed is a dynamic surface that is constantly evolving, governed by tides and currents. Mainstream needed to be able to better visualise large amounts of data – and then map, monitor and predict environment changes over time.

The Solution

Mainstream took the decision to deploy Esri's ArcGIS Server technology across its entire business. The solution was implemented with support from Esri Ireland and rolled out to eight offices in Europe, North America and Africa. *"The consultants from Esri Ireland were very capable and exceeded our expectations,"* says John Shaw, chief information officer (CIO) of Mainstream. *"They didn't have narrow technical skills; they were good at understanding our business context and helped us deploy exactly what we needed."*

ArcGIS Server integrated seamlessly with Mainstream's existing Microsoft technology – and SharePoint platform in particular – to create a consistent enterprise solution. ArcGIS gives the business the ability to not only manage its data centrally, but also analyse it, visualise it and make it readily accessible to employees and partners in a variety of formats. Shaw explains: *"We see a lot of value from ArcGIS across five core areas: visualising projects, analysing data, managing projects, mapping projects and publishing maps."*

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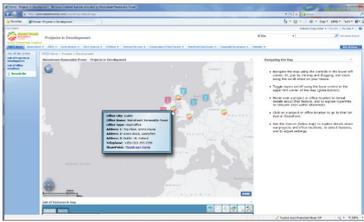
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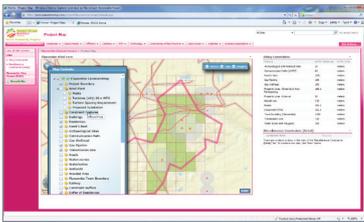
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“Processes are far more efficient now. I estimate that we have made a 40% saving in time and will get pay-back on our investment in GIS in less than two years.”

John Shaw, Chief Information Officer, Mainstream



SharePoint web-parts allow us to track our pipeline of assets (geographically), and see where our offices and projects are located. A limited amount of GIS information can be stored directly in SharePoint lists.



SharePoint Web-Parts (v.1.1.) consuming ArcGIS Server map services allow our Project Managers to visualize their projects using a dynamic map viewer. Managers can easily visualize the impact of physical and environmental features on their wind or solar projects.

Just twelve months after going live, ArcGIS was being used to manage sixty seven different projects in eight countries. Each project draws from up to fifty layers of pertinent, spatially-referenced data, which are grouped into fields. “*Very quickly, ArcGIS has given us the capability to manage a lot of data,*” Shaw says. “*It is definitely the best GIS there is in the market right now.*”

Benefits

The use of ArcGIS has reduced risk for Mainstream by helping it to manage its global projects more closely and improve collaboration between global teams. Employees in Dublin can be working with contractors in Chile and everyone sees the same information at the same time. As a result, there is less likelihood of misunderstandings and other project management issues that might otherwise increase the risk of added costs and project delays.

ArcGIS also reduces the risk of a new energy plant being planned for an inappropriate location, because it pulls together vast numbers of data sets and displays information in a format that is much easier to interpret. The solution also enables Mainstream to undertake sophisticated predictive modelling to see how factors such as climate change and sea currents might affect the chosen development site in the future.

For example, Mainstream is currently working with Esri Ireland and other partners to create a 3D, time-sequenced map of the sea bed to show how the sea bed has changed over time. Once complete, Mainstream will use this unique tool to run scenarios and create models to show how the sea bed will most likely change in the future. This information will be incredibly valuable in helping the company assess the best locations for new off-shore wind farms. “*ArcGIS is the anchor technology for this entire project,*” Shaw says. “*It will enable us to monitor the movement of silt bars, better identify risks and reduce them.*”

As well as reducing risk, Mainstream is also realising significant improvements in business efficiency, which are enabling it to accelerate its complex projects. “*Processes are far more efficient now,*” Shaw enthuses. “*I estimate that we have made a 40% saving in time and will get pay-back on our investment in GIS in less than two years. GIS is as the heart of our business strategy.*”

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