

# Decarbonising education in Ireland

## Department of Education

The Department of Education for Ireland is making photovoltaic solar panels available to thousands of primary schools, using a fully digitised, end-to-end process built with Esri's ArcGIS system. Surpassing the expectations of internal stakeholders, this GIS-based approach is optimising the efficiency of one of the Government's flagship sustainability programmes and helping to decarbonise school buildings.

### The Challenge

- Efficiently manage a complex, grant application process
- Communicate effectively with 4,000 schools

### The Benefits

- A clear and simple process for headteachers
- Exceptional efficiency in programme administration
- Data captured for intelligent decision-making
- A proven approach for improving communications

### The Challenge

The Department of Education, working in collaboration with the Department of the Environment, Climate and Communications, secured funding from Ireland's Climate Action Fund for a groundbreaking new sustainability initiative. It aimed to install solar photovoltaic panels on the rooves of primary schools nationwide to help reduce energy costs and support the decarbonisation of school buildings.

As it began to plan the implementation of the scheme, the Department of Education realised that it would need an effective way to communicate and share information with over 4,000 schools. In particular, the Climate Action Team needed a solution for sending out expression of interest surveys to headteachers, followed by electronic application forms. The department had previously used geographic information system (GIS) solutions from Esri Ireland to solve other business problems, so the in-house GIS Development Team was tasked with helping the Climate Action Team to get the Schools Photovoltaic Programme up and running.

### The Solution

Comprising two full-time employees and one external contractor, the GIS Development Team studied the capabilities of Esri's ArcGIS system. "What we came back with was well beyond the expectations of the Climate Action Team," says Alen O'Farrell, Technical Manager in the Department of Education. "We realised that we could use ArcGIS to not only digitise the survey and application process, but actually deliver a completely automated, end-to-end digital solution."

The plan was received with enthusiasm, and the GIS Development Team began by building a portal with ArcGIS Hub Premium, to act as an easy-to-use, scalable and secure channel for communicating with schools. It then created sophisticated ArcGIS Survey123 forms, to allow schools to easily submit information to the department in a standard format, including requests for funding for solar panel installations. Finally, the GIS Development Team created a programme management dashboard for the Climate Action Team, using the ArcGIS Dashboards app, enabling them to review completed surveys and initiate automated responses to schools through integration with Microsoft Power Automate.

The result is a highly efficient, end-to-end process. Schools are invited to sign up to the Hub and complete a digital expression of interest survey created in ArcGIS Survey123. Schools that meet the eligibility criteria receive an automated email inviting them to log into the Hub again to access further information and upload funding applications via an extension to their original ArcGIS Survey123 form. Schools can use the Hub to track the progress of their applications, update their applications, submit new applications and report on energy savings, when panels are operational.

Using the programme dashboard, the Climate Action Team has clear oversight of the entire scheme, and can see the information and funding applications submitted by schools. When programme administrators accept an application on the programme dashboard, emails are automatically sent out, with no manual effort, approving the staged release of funds to approved contractors. The dashboard also provides an instant, up-to-date view of all programme data ranging from where schools have applied, to how many PV installations per region and total investment to date.

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Alen O’Farrell, Technical Manager in the Department of Education

**The Benefits**

**A clear and simple process for headteachers**

The Department of Education has welcomed the positive response that it has received to the Schools Photovoltaic Programme, and it attributes this success in part to the simplicity of the process. Headteachers find it straightforward to use the ArcGIS Hub and can fill in forms and track the progress of their applications easily. In the first phase of the rollout, over 1,000 of the target 1,600 schools signed up within just one week, and the department achieved more than a 90% response to the scheme.

**Exceptional efficiency in programme administration**

Harnessing the capabilities of ArcGIS, the department’s GIS Development Team has created an exceptionally efficient process. Every stage can be easily managed by programme administrators from within the ArcGIS Dashboard and, the availability of live data, on demand, removes the need for reporting. O’Farrell says: “The entire Schools Photovoltaic Programme is being administered internally by a small team of staff. Without our ArcGIS-based process, we would probably need a team of 15-20 people for a project of this size.”

**Data captured for intelligent decision-making**

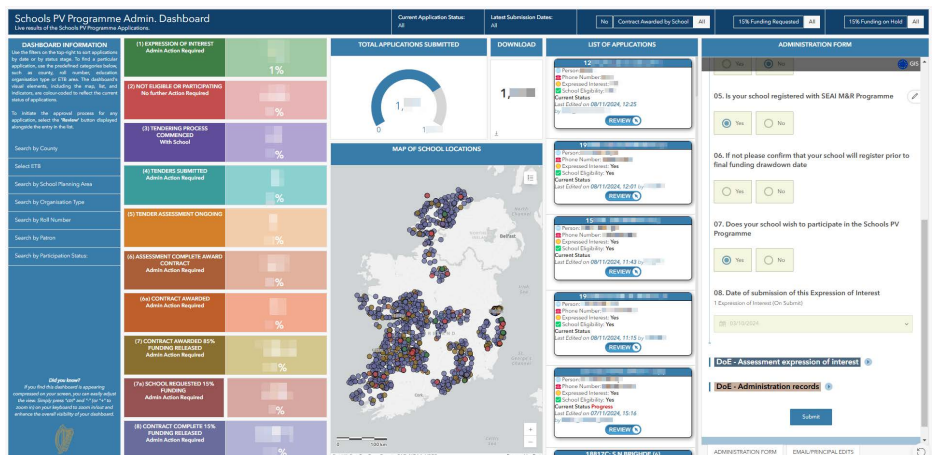
Data captured by ArcGIS can be easily analysed through the ArcGIS Dashboard and used to inform subsequent programme phases. For example, when schools in phase one report on their energy savings, the Department of Education could use this information to decide whether to vary the size of panels on schools in different locations to maximise energy generation in the future. The department can also analyse average installation costs across the country and make sure capacity exists within the industry to meet the demands of each new programme phase.

**A proven approach for improving communications**

Following the undoubted success of the ArcGIS-based process for the Schools Photovoltaic Programme, the GIS Development Team is now planning similar approaches for other programmes. The Hub, in particular, is going to be used to improve future communications with schools on everything from classroom capacity to procurement processes. “With the Schools Photovoltaic Programme, we have really demonstrated the effectiveness of GIS-led processes and created a blueprint for future initiatives,” concludes O’Farrell.

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The Administration dashboard tracks the progress of the projects as they are managed through the funding application process.