

Dr Liana Cipcigan

Industrial Fellowships  
Scheme



**Dr Liana Cipcigan**, a Reader in the School of Engineering at Cardiff University, held a Royal Academy of Engineering Industrial Fellowship between 2015 and 2016. During the Fellowship, she collaborated with National Grid on a project addressing the challenge of efficiently balancing the supply and demand of energy in the future.



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**ENGINEERING**

“The Fellowship strengthened my research capabilities in developing real commercial solutions through knowledge of industrial challenges at a time of important changes in electricity networks.”

## RESEARCH

Dr Cipcigan’s research expertise includes power systems analysis and the efficient management and distribution of energy. The Fellowship provided an opportunity to develop this work and strengthen an existing relationship with National Grid. Dr Cipcigan collaborated with the Energy Insights Team to investigate future energy challenges.

Balancing lower energy demands in summer with higher demands in the winter is a complex task. With colleagues at National Grid, Dr Cipcigan investigated the extreme conditions presented by this scenario. They were specifically interested in measuring the potential impact of solar energy generation on energy supply and demand in summer. This led to the identification of new areas of research and calculation methods needed to improve energy forecasting.

Such tools have the potential to provide real-time data, which is required for efficient, reliable and sustainable energy management. They also looked at other balancing services such as network management and the coordination of energy storage.

“Working in a multidisciplinary department enabled me to understand the policy and economic drivers for shaping the electricity landscape along with the regulatory and commercial factors,” Dr Cipcigan explains.

## IMPACT

Balancing services has an important role in the affordable and sustainable provision of energy in the future. National Grid currently spends over £1 billion a year in this area. Dr Cipcigan plans to continue working with National Grid on this issue and joint research proposals are in the pipeline.

“I received a fresh perspective from National Grid on current challenges in the electricity sector,” she says. “This helped to develop cross-sector competences and open new research areas.”

Dr Cipcigan’s teaching has also been transformed by the collaboration and several PhD students have benefited from placements at National Grid as a result. Additionally, National Grid has participated in a number of workshops that Dr Cipcigan has organised for master’s level and undergraduate students and there are plans for these to continue on a regular basis.

## PROFESSIONAL DEVELOPMENT

As well as opening up new research possibilities, Dr Cipcigan credits the Fellowship as supporting her progression from a senior lecturer to a Reader. The collaboration has also resulted in several publications.

“My secondment at National Grid consolidated my belief that links to industry are essential to science,” she explains. “It gave me a fresh and alternative perspective, along with valuable insights into current industrial issues.”

## ROYAL ACADEMY OF ENGINEERING INDUSTRIAL FELLOWSHIP SCHEME

The Industrial Fellowship scheme provides an invaluable opportunity for early- to mid-career academics to undertake a collaborative research project in an industrial environment. The scheme aims to strengthen the strategic relationship between the university and the industry host by providing an opportunity to establish or enhance collaborative research between the two parties and enhance the quality of teaching.