

## research highlights

### ENERGY POLICY

### Guiding green lighting

*Energy Policy* **110**, 31–39 (2017)

Lighting forms a steady 10–13% of China's electricity consumption, while rapid economic development also brings an average growth rate of lighting demand of 4.3% per year. In 1996, to help curb pressure on the electricity system, the Chinese government introduced the Green Lights Program to promote energy efficiency in lighting. Comprising several stages, the programme sought to reduce electricity consumption and its associated pollutants, slow the need for new power generation capacity and provide high-quality efficient lighting to consumers. After over 20 years of sustained government support for the programme, Fei Guo and Shonali Pachauri at the International Institute for Applied Systems Analysis, Austria, undertook an assessment of its impacts and level of success.

Using various sources and studies undertaken by institutions in China and the United States, as well as by the United Nations, Guo and Pachauri collated data on a set of indicators spanning the programme's aims. They found that the Green Lights Program led to savings of 3% of annual household electricity consumption and consumer cost savings of 70%. Average annual production of compact fluorescent lamps grew by 28.4% over the period to 2016, with over one million skilled jobs in place by the end of 2015. Guo and Pachauri attributed the success of the programme to the government's sustained commitment since 1996, employing a variety of incentives such as mandatory product phase-outs, subsidies and awareness-raising activities, across planned stages, in what came to be a close alignment with industrial development strategy. The implementation of national standards for lamp lifetime and luminous efficacy also greatly improved the quality and cost of lighting. While challenges remain for the future, including increasing awareness among rural populations and adapting to the emergent light-emitting diode market, the Chinese Green Lights Program showcases a number of successes for developing nations to undertake their own energy efficiency programmes.

Nicky Dean