

News Release
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Leading Engineering Institution Warns of Growing Risk of Widespread Blackouts

- Inadequate planning could lead to system failure –

The Institution of Engineers in Scotland is calling on government to transform its approach to governance of the electricity system via a national energy authority in order to safeguard its long-term sustainability and avoid the increasing risk of blackouts.

The Institution is concerned about the growing likelihood of a complete failure of the electricity system due to the combined effect of the closure of coal-fired power stations and the growth of intermittent renewable generation. This represents a significant change to the mix of generation types, potentially making the system less stable, increasing the probability of system-wide failure.

The engineering body says a whole system analysis is required, using professional engineering methods, to address the changing requirements for the electricity system as the drive to reduce emissions continues. It is urging politicians and policymakers to undertake a radical review of the forward planning process to ensure the country's future energy supplies are secure.

IESIS has published its call to action in a report, *Engineering for Energy: A proposal for governance of the energy system*, which it plans to take to the Scottish and UK governments.

Iain MacLeod, Institution of Engineers in Scotland said: "The electricity system was designed with generation coming mainly from coal and nuclear energy. However, as we change generation sources to include intermittent renewables, such as wind and solar, we must review how the entire system works with these new inputs. The risks involved when introducing new sources of generation need to be controlled.

"Intermittent renewable energy sources do not supply the same level of functionality as power stations to meet demand at all times and avoid operational faults. Intermittency issues relevant to wind and solar energy have not been adequately explored."

The Institution of Engineers in Scotland is warning that failure by government to act could lead to widespread power cuts with longer time needed to restore supply. A complete failure of the system would require a 'blackstart'; without Longannet power station, which closed in 2016, the time to restore electricity supplies to Scotland could potentially take days rather than hours.

In addition, the cost of integration of intermittent renewables to the current electricity system will lead to increasing energy costs for consumers. The extra generation and storage needed to safeguard security of supply, the facilities required to ensure it is stable, extra transmission facilities, and energy losses over power lines from remote locations will all contribute to rising costs.

Iain MacLeod added: "In the past, the system was designed to keep the risk of failure to an acceptable level. For many decades the risk of failure was low. Now, we are closing thermal stations to reduce emissions without a robust plan in place to address the long-term security of supply and security of operation. The system should have an appropriate proportion of each type of generation and the appropriate proportion must be determined by robust and reliable studies to inform decision-making."

The Institution recommends that a not-for-profit national energy authority, is formed to address all the actions that need to be taken by government in relation to energy. A parliamentary commission should be appointed, as a matter of urgency, to establish how the authority should be constituted. The involvement of professional power systems engineers is vital to inform core decision-making.

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Notes to Editors

- Issued by Clark Communications on behalf of the Institution of Engineers in Scotland. For further information contact Angela Hughes angela@clarkcommunications.co.uk; 07970 184 198
- The report, Engineering for Energy: A proposal for governance of the energy system is available online at www.iesis.org/efore/
- Photo of Iain MacLeod attached
- The Institution of Engineers in Scotland is a multi-disciplinary engineering body, founded in Scotland, that provides a forum for individuals from all engineering and related disciplines to discuss and exchange information, generate ideas and encourage young engineers. The Institution aims to promote a wider understanding of the role of the professional engineer in society. It currently has 500 members. More information: www.iesis.org