

## FREQUENTLY ASKED QUESTIONS

Many people have serious concerns about nuclear power, such as:

### Can nuclear waste be stored safely?

Yes. The volume of radioactive waste involved is very small. The nuclear industry has managed its waste safely ever since it first generated electricity in 1956. High-level waste awaits final disposal in a deep repository in a geologically stable rock formation. Low-level waste will be managed in the same way as the low-level waste produced from medical and industrial sources. Ireland would not store spent fuel here but would return it to the supplier under an international fuel purchase agreement.

### Would nuclear power expose us to high radiation doses?

No. Exposure we receive from natural radiation is several hundred times more than that from all nuclear industry activities. Medical x-rays expose the average person to over a hundred times more radiation than that resulting from nuclear power.

### Is there enough nuclear fuel for all the reactors currently being built?

Yes. The anticipated use by mid-century of Generation IV fission reactors, which extract some fifty times more energy from uranium than current designs, will ensure that uranium supplies will last for thousands of years. Further, the possible development of nuclear fusion as a power source before 2100 could add an additional dimension to the world's energy options.

## WHAT IS BENE?

BENE (Better Environment with Nuclear Energy) consists of civic-minded people interested in energy use and the impact it has for our economy and environment. We are concerned that Ireland is not being fully informed (and is frequently misinformed) on the issue – we present the facts about nuclear energy.

Our core group has collective expertise in engineering (mechanical, electrical, power generation and distribution, marine and nuclear), radiation protection and regulation, nuclear physics, medicine and economics. A small number of specialists act as expert advisers to the core group.

Our supporters come from many backgrounds in Irish life. Our core members, advisers and supporters are listed at [www.bene.ie/bene/about\\_us.html](http://www.bene.ie/bene/about_us.html)

Our limited funds are derived solely from our members and a small number of private donations. We have no vested interests and receive no corporate funding of any kind.

### FURTHER INFORMATION

See [www.bene.ie/bene/brochure](http://www.bene.ie/bene/brochure) for more details on everything in this brochure.

### BECOME A SUPPORTER!

You can help our campaign by becoming a Supporter. Send an email to [info@bene.ie](mailto:info@bene.ie) or visit [www.bene.ie](http://www.bene.ie)

**B E N E**  
Better Environment with Nuclear Energy

## NUCLEAR ENERGY FOR IRELAND?

*“Nuclear is cheap, clean, reliable and safe.”*

### WHY IRELAND SHOULD CONSIDER NUCLEAR ENERGY

**Energy and the economy.** Ireland faces major energy challenges in the next 15 years.

- Energy costs are increasing
- We depend too much on fossil fuels
- Renewables alone will not be enough.

Nuclear power can supply reliable and safe electricity *and* reduce prices.

**Costs.** Fossil fuels and emissions reduction are increasingly expensive. Severe penalties will result if we fail to meet our reductions targets.

*Nuclear power is the cheapest way to reduce emissions after energy efficiency.*

**Fossil fuels** cause greenhouse gases and supply of gas and oil is unreliable and diminishing.

*In Ireland, we get about 90% of our energy from imported fossil fuels.*

**Renewables** are unlikely to supply even half of our energy. Our 2050 emissions reduction targets will not be met with renewables alone.

*We can meet our emissions targets by including nuclear power.*

**We need nuclear power for cheap, clean, reliable and safe electricity!**

*A large part of the cost of construction of a nuclear plant would be spent here, helping local industry and services. Irish jobs in engineering, legal, finance, regulation etc. would be secured for the life of the plant – over 60 years.*

## IS THERE AN ALTERNATIVE TO NUCLEAR POWER?

There would be no need to consider nuclear power if there was an economic alternative that was low-carbon and reliable. No other option meets all the requirements.

Renewables, such as wind and wave energy, offer some apparent advantages but their disadvantages are less obvious. Because of their intermittency they can make only a limited and expensive contribution. Nuclear energy is not a panacea, but it is the only reliable, economic and environmentally friendly source of bulk electricity available today.

There are deeply held opinions about nuclear energy in Ireland. However, we should decide our energy future, not on complacency or prejudice, but on a rational analysis of the respective risks and rewards.

We should start planning soon for a nuclear energy supply, given the long lead-time for construction of such facilities.

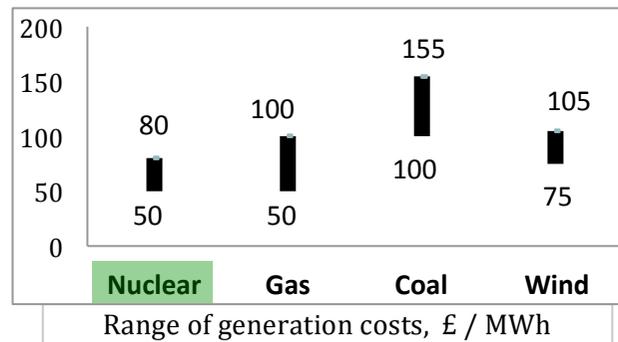
## ADDITIONAL BENEFITS TO THE LOCAL AREA AND TO IRELAND

“Going nuclear” would show the international community that Ireland is serious in addressing its energy and infrastructural problems and this could attract further industry as a result.

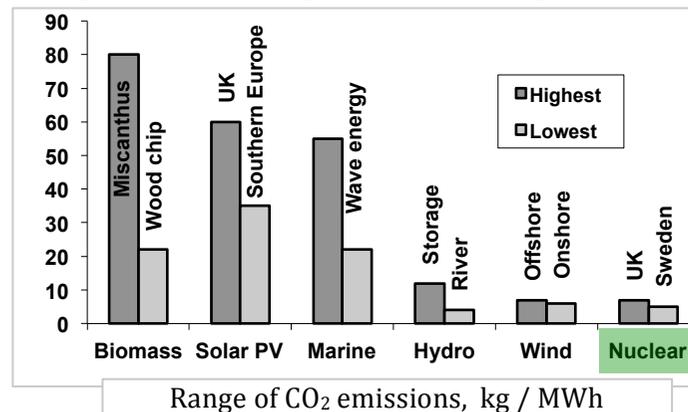
The local Council would receive good local taxes and rates, facilitating the provision of excellent local services for the design life of the nuclear plant – at least 60 years. Local jobs in various technical and service roles would also be secured for many years.

## WHY NUCLEAR POWER IS ESSENTIAL FOR IRELAND

**Cost** The Sustainable Energy Authority of Ireland reports that nuclear power is the cheapest large-scale means of reducing carbon emissions. Many national and international agencies confirm that nuclear power is cost effective. The graph below shows new nuclear power to be the cheapest source of electricity for the UK. New designs of small, modular reactors are expected to be even safer and cheaper.



**Emissions** Nuclear power has the lowest carbon emissions of all energy sources, even after allowing for all stages of the cycle from mining to de-commissioning. Nuclear power therefore can help Ireland reach our agreed carbon reduction targets, thus avoiding severe financial penalties.



**Safety** Nuclear power is by far the safest means of electricity generation in over 14,500 cumulative reactor years of operation, despite three serious accidents since its inception.

- ❖ Three Mile Island (1979); no fatalities or injuries,
- ❖ Chernobyl (1986); a reactor of inherently unstable design was operated without appropriate supervision,
- ❖ Fukushima (2011); has prompted reconsideration of reactor design and siting for extremely low probability events and in earthquake-prone regions.

Hydroelectric power has caused the most direct fatalities of all means (due mainly to dam failures). Coal-fired power generation causes hundreds of thousands of premature deaths around the world every year.

All accidents are avoidable. Over 400 responsibly operated nuclear power stations in more than 30 countries show that they can be designed, built, managed and regulated safely.

**Security of supply** Many years supply of fuel from stable countries, such as Canada and Australia, can be stored safely at the power station because of the small quantities required.

**Suitability for Ireland** Some existing reactors are suited to our grid in terms of size, safety and all other characteristics. New, smaller designs, with improved features and more predictable build cost, will soon be available and will be perfect for our existing grid structure. Electrification of transport and heat could be assisted by cheap, low-carbon nuclear power for many years to come.