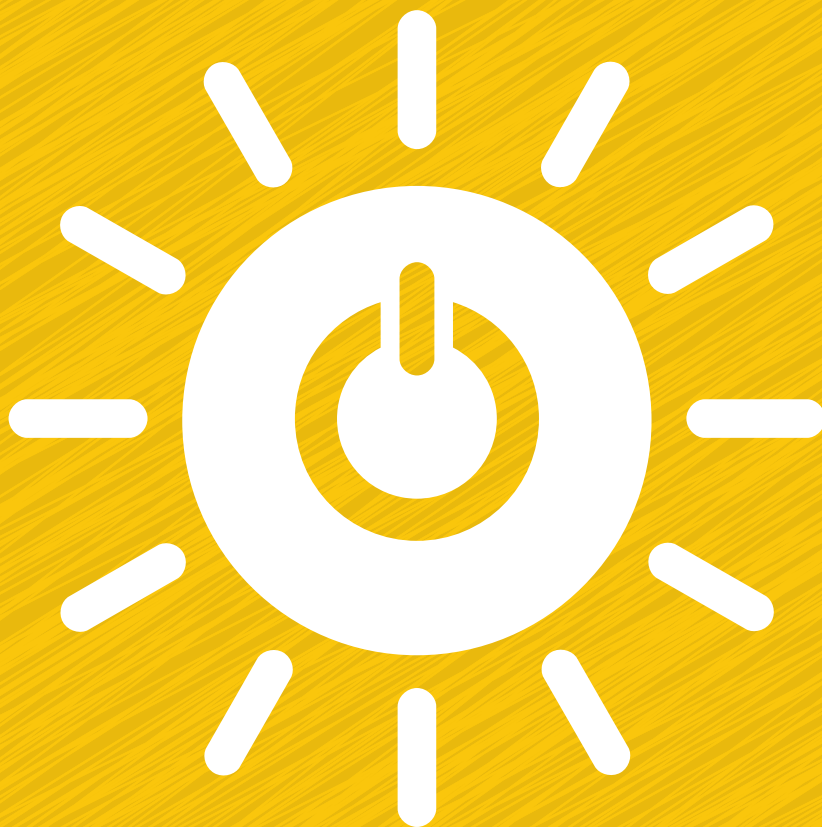


AFFORDABLE AND CLEAN ENERGY

RESOURCE FOR TEACHERS AND FACILITATORS



AFFORDABLE AND CLEAN ENERGY

EDUCATION RESOURCE



If the world were a village of just 100 people 17 of them would have no electricity.

- In real terms this means that in our world of over 7 billion people, 1.2 billion live without electricity in their homes.
- Without electricity night time means either darkness or the dim glow of an unhealthy kerosene lamp or candle.

To do their homework children have to sit close to a kerosene lamp because the quality of the light is so poor.

The World Health Organization says that breathing in the fumes from these lamps can have the same effect as smoking two packets of cigarettes per day. Yuck!



**ABOUT 1.5 MILLION PEOPLE,
MOSTLY WOMEN, DIE OF THIS
POLLUTION EVERY YEAR.**



KEROSENE LIGHTS are one of the major causes of household fires in Sub Saharan Africa because they can so easily be knocked over and break. Burns can cause major infection. There is little hope of survival for badly burned victims in these situations. Many families across the developing world spend \$50 to \$150 per year on kerosene to use in their lamps...which for many families can be up to 30% of their annual income.



Imagine the world at night as seen from space. I am sure many of you have seen this picture, but every time I see it I am reminded of one of the most important issues of our day — energy poverty. The United States and Europe is brightly lit. Africa is dark. So is much of the rest of the developing world. Cities show on the map, but the rural poor live — quite literally — in the dark.

Ban Ki moon UN Secretary-General

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More than 95% of people living without electricity are in rural areas in sub-Saharan Africa and Asia.



In Bangladesh **60 million people** or 38 per cent of the population have no electricity.



In the Democratic Republic of the Congo **61 million people** or 91 per cent of the population have no electricity.



In Haiti **7 million people** or 71 per cent of the population have no electricity in their homes. Many of those who do have electricity only receive power for five to nine hours a day.



In Somalia **9 million people** or 85 per cent of the population have no electricity.



In Sierra Leone **6 million people** or 95% of the population have no electricity.

(Sources: World Bank, World Energy Institute, 2015)

Discussion
point

Imagine... Living without electricity

Have you ever been in a 'blackout' where the power failed for three hours or more?

- Make a list of all the things you couldn't do
- Make a list of all the things you did instead
- Which did you prefer: Living with or without electricity?

Rural Electrification in Ireland

For most of us the only time we don't have electricity is if there is a blackout because of a storm or a fault at a power station. Generally the fault is fixed within a few hours and we get back to life as normal.

Just over 70 years ago here in Ireland it was a different story. Back then many parts of rural Ireland had no access to electricity. In fact it was only in 2003 that the last remaining islands – Inishturbot and Inishturk, off the Connacht coast were finally connected to the mains electricity supply.

Having electricity removed a lot of the drudge from home and farm life. Pumps could be electrified and dairying revolutionised. The electric fence could keep cows in check and scare off townie kids for a while. Rural industry could now develop with much better prospects of survival. Even the streets could now be lit up at night, making it safer to walk home after dark.

IRELAND FLICKS THE SWITCH

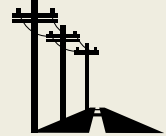
On November 5th, 1946, Ireland's rural electrification project got under way: the first pole was erected at Kilsallaghan Co Dublin.



400,000
Rural homes in need of electricity in 1946.



792
Districts rural Ireland was divided into.



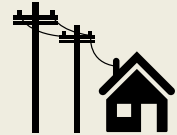
1m
Poles erected.



48,930
Miles of wire strung, equivalent to 78,754km. That's about 293 car journeys from Dublin to Cork.



£36m
Cost of rural electrification, equivalent to about €1.5bn today.



81%
Rural homes connected by 1965.

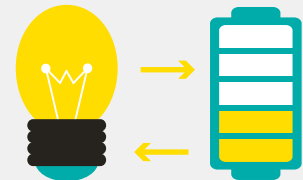
Source: Irish Times, October 29th, 2016

Imagine... Living in Rural Ireland before Electrification

Discussion point

When it got dark outside:

- How did children do their homework?
- With no TV or video, what games did children play?
- With no electric fridges how was food stored?



CLEAN ENERGY: SOLAR POWER

As we all know the burning of fossil fuels (coal, oil and gas) are one of the biggest contributors to climate change. World leaders have promised to reduce the amount of fossil fuel their countries use, by replacing them with 'clean' or renewable energy sources such as solar, wind, wave and thermal power.

The **Sustainable Development Goals (SDGs)**

are a series of 17 promises that leaders from 193 countries (including Ireland) made to make our world a better place for all people. Goal 7 says that by 2030, we will be "... supplying modern and sustainable energy services for all in developing countries, particularly in the least developed countries."



AFFORDABLE AND CLEAN ENERGY

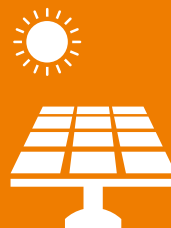
EDUCATION RESOURCE



Solar power is the future of energy production. The consumption of non-renewable energy such as coal, oil, and natural gas, is unsustainable, and solar power offers an alternative.

Some Facts about Solar Power

- Solar power uses the natural energy of the sun to produce electricity. It is sustainable and renewable
- Solar energy has been used by humans for thousands of years for uses such as heating, cooking food, removing salt from seawater and drying clothes
- Today solar energy is used to create electricity. As technology has improved, solar power costs have decreased and it has become a more affordable and accessible alternative, competing with energy sources such as coal and oil
- While solar power is becoming more efficient, it only provides a small fraction of the world's energy supply (just over 1 per cent)
- China is the world's leading solar producer and seeks to triple its capacity by 2020. These goals are largely tied to the fact that cities like Shanghai and Beijing have the highest rates of air pollution in the world
- The largest solar power plant in the world is found in the Mojave Desert, USA. (pictured above)



Getting 1.2 BILLION PEOPLE LOCAL SOLAR POWER THEY CAN AFFORD is within grasp – if we only think about the problem in a different way. In fact, the world can finish this job by 2020.

Carl Pope, Guardian Newspaper, 2012

In most of the countries where Concern works the one thing there is no shortage of is sun shine, which is perfect for converting into energy.



Gioma Maaji received a solar block light from Concern after the Nepal Earthquake in 2015. She felt the solar lights were an important part of the emergency help because the mains electric took time to be connected and it often goes off.

Photographer: Alastair Taylor, Concern Worldwide, Nepal 2015

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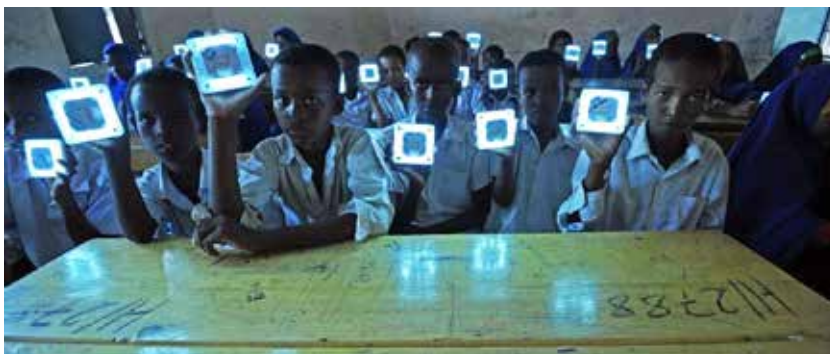
The solar Buddy is a solar light with an integrated solar panel. It comes in a kit of components and can be easily assembled by any child over the age of 7.

The Buddy is much more powerful than a kerosene lamp and this daily expense is eliminated leaving the family with added money for their family budget. Any savings made like this at the family level will be spent on other essentials like food and education. The Buddy light has a battery with a 3 year life span and can be replaced at the end of that time so the receiving families can save hundreds of dollars by receiving the light.

The Buddy is fun to make and was designed so children can build a solar Buddy with their hands and send it to those who are living without electricity.

The **Buddy to Buddy exchange** was piloted in July, 2015 by using a small solar light that was distributed by **Concern Worldwide** to a school in Somalia.

In the **Philippines** small solar lights were distributed in large numbers by Concern to remote fishing community households in the Philippines after Typhoon Haiyan in November 2013.



Irish rugby player Rob Kearney holding the Solar Buddy lights. Photo Concern, 2015

These hand-held lights could be charged quickly in direct sunlight and provided lighting to families in temporary shelters at night time. This ensured that children could read and family members could continue to work after the sun went down. As electric power was still down for months after the typhoon, these solar lights remained very popular and many households continue to use them.

WOULD YOUR CLASS LIKE TO BE A SOLAR BUDDIES?

Contact schools@concern.net to register and find out more.



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CONCERN
worldwide

SUSTAINABLE DEVELOPMENT GOALS



