

Energy Education Forum 2023

Event Report



SEAI Energy Education Forum 2023

Event Report

August 2024

World Café Report prepared for SEAI by:
DCU

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Sustainable Energy Authority of Ireland

SEAI is Ireland's national energy authority investing in, and delivering, appropriate, effective and sustainable solutions to help Ireland's transition to a clean energy future. We work with the public, businesses, communities and the Government to achieve this, through expertise, funding, educational programmes, policy advice, research and the development of new technologies.

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Opening words and acknowledgements

SEAI is proud to have been at the forefront of advancing energy education and climate literacy among children and young people in Ireland since the establishment of our Education and Youth Programme in 1995. Since then, we have gained a deep understanding of how the climate crisis, has impacted on and accelerated biodiversity loss and environmental degradation, and the critical role sustainable energy has to play. All of these existential issues demand an unprecedented focus on equipping future generations with the knowledge and skills required to create a more sustainable future.

We have long recognised the transformative power of education in shaping more sustainable behaviours and fostering a culture of environmental consciousness. Through our educational resources, workshops, and initiatives, we aim to empower students and teachers with the knowledge needed to make informed decisions about energy use in their everyday lives. We also acknowledge the importance of collective action and collaboration to amplify our impact.

On the 25th of October 2023, the SEAI Energy Education Forum brought together policymakers, energy education stakeholders and environmental advocates to discuss and collaborate on the future of energy education in Ireland. The participants were invited to join in a collective endeavour to explore new ideas, share best practices and exchange ideas. The SEAI Energy Education Forum has been a catalyst for a more collaborative and interconnected future in the field of energy education in Ireland.

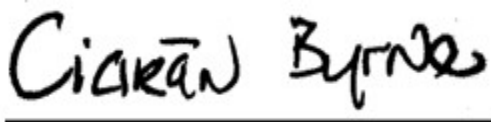
The Forum has been a vital platform for stakeholders involved in climate, STEM, and environmental education to engage in dialogue, exchange ideas, and foster collaborations. By bringing together this expertise, we aimed to inspire innovative thinking and cultivate new partnerships. These objectives, we believe were not only met but exceeded.

I extend my appreciation to our keynote speaker, Duncan Stewart, for his inspiring address and to Dr. Cliona Murphy and Dr. Benjamin Mallon from DCU School of STEM Education, Innovation, and Global Studies who facilitated the World Café Workshop and drafted the recommendations in this report.

I also wish to thank all the participants for their input. The World Café workshop provided us with a set of recommendations that will be instrumental in shaping SEAI's Education and Youth strategy and a roadmap towards a cleaner energy future.

With your contribution in this process, our Education and Youth Programme will be in position to deliver even more value for the young people and their educators who we support.

Sincerely



Dr Ciaran Byrne
SEAI Director of National Retrofit

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Energy Education – Global and National Context

SEAI Education and Youth Programme is aspiring to support the Irish education sector from early years to Leaving Certificate on delivering energy education learning outcomes.

What is energy education and why it matters?

SEAI is leading Ireland's energy revolution and from our point of view energy education is crucially important part of our mission. SEAI Education and Youth Programme seek to promote energy efficiency and clean technologies across all educational levels, in line with UNESCO's definition of energy education.

Definition by UNESCO:

Energy education promotes energy efficiency, but it also combines all levels of learning up until research and development towards more energy efficient and clean technologies making those new innovations possible.

Energy education promotes energy efficiency, but it also includes learning that helps us to develop technologies that waste less energy. It encourages us to work together to research and develop renewable and other clean energy resources.

We believe that energy education should start during early years education and continue until early adulthood when young people start making their consumer choices.

Energy education learning outcomes for education settings

Early Years

- The concepts of electricity, light, heat/cooling and the sun's energy;
- An initial understanding of what energy is and where it comes from.
- An initial understanding of the importance of energy conservation and safety.

Primary Education

- Pupils get acquainted with different forms of energy production, for example fossil fuels, wind energy, solar energy and their associated technologies, and the reasons why different forms of energy production are best used in different geographies and contexts;
- Children learn to monitor their own energy consumption, including in the classroom setting, thereby equipping themselves with the right tools to adapt their daily living habits and behaviours towards models of sustainable living.

Secondary Education

- Pupils are introduced to concepts such as an ecological footprint and ecological accounting, fundamental tools to develop their ability to assess the appropriateness of their energy choices in different contexts.
- As a result, young people should be able critically analyse types of energy use in their home area in terms of renewability.

Source:

[SDG Resources for Educators - Affordable and Clean Energy \(unesco.org\)](https://www.unesco.org/en/energy-education)

Teacher capacity building

- Educators are encouraged to incorporate Education for Sustainable Development (ESD) pedagogies.
- Developing comprehensive ESD capacity across all levels of the education system.

Source:

[SDG Resources for Educators - Affordable and Clean Energy \(unesco.org\)](https://unesco.org)

Informal education setting and citizen engagement.

- The journey towards energy-aware citizenship involves a multi-faceted approach, starting with early education on energy and climate issues.
- We also believe that energy education initiatives need to reach beyond primary and secondary schools, promoting awareness through citizen engagement initiatives among parents and youth groups.
- Furthermore, empowering young voices in the national climate discussions need to be encouraged through supporting youth-led initiatives and opportunities for participation.

Source:

Climate Action Plan 2024 [gov - Climate Action Plan 2024 \(www.gov.ie\)](https://www.gov.ie)

Second National Strategy — ESD to 2030 [gov - National Strategy on Education for Sustainable Development in Ireland \(www.gov.ie\)](https://www.gov.ie)

Highlights of the Inaugural SEAI Energy Education Forum

Forum Objectives

The aim of the SEAI Energy Education Forum is to create a platform for key stakeholders and policy makers to come together and participate in a high-level policy discussion regarding the future of sustainable energy education in Ireland. The primary objective is also to consolidate the mission of the SEAI Education & Youth within Irish climate action policy to promote and enhance sustainable energy education and youth citizen engagement initiatives in the national climate policy.

The Forum provided an opportunity for participants to engage in meaningful dialogue around ways to further embed sustainable energy education within the national curriculum and education system. By bringing together experts, educators, policymakers, and other stakeholders, our aim was to collaboratively identify strategies, best practices, and opportunities for advancing sustainable energy education in Ireland.

Through open communication, knowledge sharing, and interactive workshops, SEAI Energy Education Forum drove innovation, inspire action, and facilitate collaboration among diverse stakeholders. The goal was to create a roadmap for the future of sustainable energy education in Ireland that is aligned with national climate objectives and priorities.

By harnessing the collective expertise and insights of participants, this forum fostered new partnerships and explored opportunities that can further strengthen the programme's effectiveness.

Currently, our strategic goal is to ensure that every primary school child in Ireland engages with SEAI's energy and climate education twice, while also providing resources and workshops for teachers at secondary level. The current programme was developed in collaboration with expert teacher panels and educators; however, it is crucial to continuously improve and adapt to maximise its impact.

To address this, in collaboration with the DCU School of STEM Education, Innovation, and Global Studies, a World Café Workshop was held to facilitate the exchange of ideas and best practices aimed at promoting youth engagement through energy and climate education.

Through this workshop, the goal is to gain a deeper understanding of the diverse stakeholder ecosystem involved in climate and sustainable energy education, and to identify new avenues for collaboration that can enhance the programme outcomes.

Ultimately, the objective of this event is to encourage dialogue, stimulate innovation, and establish a strategic direction for the future of sustainable energy education in Ireland. This collaborative effort seeks to pave the way for a more sustainable and environmentally conscious society in Ireland and beyond.

Visit [the SEAI website](#) to stay up to date on Energy Education Forum updates



Keynote speech: A case for embedding Environment, Climate & Energy as a core subject in Ireland's school curriculum by Duncan Stewart – key messages

Duncan Stewart's keynote speech, "A case for embedding Environment, Climate & Energy as a core subject in Ireland's school curriculum," presented a compelling case for integrating environmental education meaningfully as a core subject in the primary and post primary curriculum, emphasising the crucial importance of empowering youth climate literacy. Duncan also highlighted the need for improved access for teachers to training in climate and environmental subjects during their initial teacher training as well as their Continuing Professional Development (CPD) Furthermore, the speech called for more decisive and better-informed action from policymakers, highlighting the urgency in addressing the climate crisis.

Duncan emphasised the need for a comprehensive and integrated approach to environmental education, which includes the study of climate science, sustainable energy, and environmental issues. Duncan emphasised that environmental education is essential for empowering youth citizen engagement and behavioural change.

"Empowering young people to be agents of change, to be the leaders of the future, requires us to educate them in a way that is relevant, engaging, and transformative. We need to teach them not just about the facts and figures, but about the values and principles that will guide them as they navigate the complexities of the 21st century. We need to give them the skills and knowledge to be critical thinkers, problem solvers, and effective communicators. We need to inspire them to be curious, creative, and courageous. And we need to empower them to take action, to make a difference, and to shape the world around them."

In his keynote speech, Duncan proposed the creation of a new core subject in Ireland's school curriculum, focusing on environment, climate and energy. This subject would require a comprehensive approach to environmental education, covering climate science, sustainable energy, and environmental issues. The subject would need to be embedded in all primary and post primary schools, with sufficient resources and support for teachers.

"We need to integrate environmental education into the curriculum, not just as a peripheral subject, but as a core subject that is integral to every aspect of learning. This means recognising that environmental literacy is not just about learning about the natural world, but about developing a deeper understanding of the interconnectedness of human and natural systems. It means incorporating environmental education into every subject area, from science and maths to language arts and social studies, to help students understand the complex relationships between human behaviour, technology, and the environment. It means using real-world examples and case studies to illustrate the importance of environmental sustainability, and encouraging students to think critically and creatively about the challenges we face."

Duncan emphasised that teachers have a crucial role in informing, engaging, and inspiring students. However, he acknowledged that educators need to have better access to training on environmental themes and subject matter, both globally and locally, to be able to relate these issues to their students' lives. Duncan also highlighted the importance of student action projects, that can inspire climate advocacy campaigns in their local communities.

"We need to support teachers in their role as educators, providing them with the knowledge, skills, and confidence to teach environmental education effectively. This requires not only a deep understanding of the subject matter, but also a range of pedagogical skills and strategies to engage students in meaningful learning experiences. It requires a commitment to ongoing professional development, to staying up-to-date with the latest research and best practices, and to collaborate with colleagues and experts in the field. And it requires a recognition of the importance of teacher education in shaping the next generation of environmental leaders and decision-makers. By supporting teachers in their role as educators, we can empower them to make a positive impact on their students' lives, and to inspire a love of learning that will last a lifetime."

Duncan also spoke about how the climate crisis already affects our daily lives. He pointed out that climate-related disasters, such as floods, droughts, and heatwaves, are becoming increasingly frequent and severe, causing loss of life, destruction of property, and displacement of communities. Furthermore, Duncan highlighted the long-term consequences of unmitigated climate change, including food insecurity, water scarcity, and social and economic instability.

Duncan encouraged educators to take a proactive approach to environmental education. This includes developing skills such as critical thinking, problem-solving, and collaboration, as well as promoting values such as sustainability, resilience, and social responsibility.

"The science is clear, the impacts are devastating, and the urgency is palpable. We need to prepare our young people for a world that is being dramatically reshaped by climate change. We need to teach them about the science, but we also need to teach them about the humanity, the resilience, and the hope that can come from facing this crisis. We need to empower them to be agents of change, not just passive recipients of information. We need to give them the skills and knowledge to not just adapt to a changing world, but to shape that world themselves."

Duncan also emphasised the importance of creating a sense of "constructive hope" among young students about their future lives, rather than instilling fear or climate anxiety.

"We need to create a sense of constructive hope among young people about their future lives, rather than instilling fear or anxiety. We need to inspire them to be part of the solution."

He said it's important that policymakers prioritise environmental education and take evidence-based policy decisions to ensure a sustainable future for our young generation but stressed that the climate crisis is an issue that needs to be addressed now

"We need policymakers to take evidence-based policy decisions that prioritise environmental education and ensure a sustainable future for our young generation."

"This is not just a challenge for educators or policymakers; it's a collective effort that requires all of us to work together to create a more sustainable future for our young."

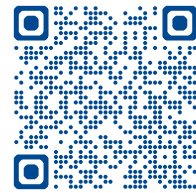
About Duncan Stewart

Duncan Stewart has been a champion for environmental and architectural conservation since his student days. For the last three decades he has been a popular television personality, as producer and presenter of the programme 'Eco Eye' that examines environmental issues both at home and abroad.

In 2021, Duncan Stewart was honoured with the Outstanding Contribution to Sustainable Energy Award.

In 2023, he was awarded with the Honorary Freedom of the City of Dublin alongside Climate campaigner Greta Thunberg.

You can download Duncan's full speech at [SEAI Energy Education Forum webpage](#)



World Café: Future of Energy Education in Ireland

Dr. Benjamin Mallon, Centre for Human Rights and Citizenship Education, Dublin City University, Institute of Education

Dr. Cliona Murphy, Centre for the Advancement of STEM Teaching and Learning (CASTeL), Dublin City University, Institute of Education



Introduction

The following section introduces the world cafe methodology employed during the forum on the 25th October, 2023. This section comprises:

- a description of the key questions guiding the World Cafe process;
- an overview of the World Cafe participants;
- a summary of the key findings from the World Cafe discussions; and

finally key recommendations as suggested by the participants and educational research and policy documents

Methodology

A total of 42 participants had registered for the forum, which included participants from a number of organisations: Sustainable Energy Authority of Ireland (SEAI) An Taisce, universities (DCU and UCD), a number of governmental departments (Department of the Environment, Climate and Communications; Department of the Environment, Climate and Communications; Department of Education and Skills; Department of Further and Higher Education, Research, Innovation Science), and other key stakeholder groups and networks (ECO-UNESCO; Irish Primary Principals Network (IPPN); Early Childhood Ireland; Irish Development Education Association (IDEA); National Council for Curriculum and Assessment (NCCA); Wind Energy Ireland).

Participants for the World Cafe were spread across six groups on separate tables and were invited to respond, to three key questions raised by the facilitators. The three research questions and associated prompts are outlined in Table 1 below.

Table 1: Key Questions and Prompts

Key Questions	Prompts
<p>1. What is the role of energy education within the sphere of climate education and education for sustainable development?</p>	<p>How do you perceive the importance of sustainable energy education? What are the challenges faced by sustainable energy education in Ireland?</p>
<p>2. What partnerships /collaborations are required to further education for sustainable development and climate action efforts?</p>	<p>Which existing/potential partnerships can support this work? What aspects of outreach (formal/non-formal/informal) are required to support the inclusion of all stakeholders? What role do schools take in this work? How can community engagement be fostered? What role will children and young people take?</p>
<p>3. What is SEAI's future role in energy education as part of climate change Education and Education for Sustainable Development?</p>	<p>To think about: Partnerships/collaborations Supporting youth citizen engagement / behavioural change Supporting ongoing space for dialogue</p>

Each group had a nominated rapporteur. Participants were afforded 15-minutes to discuss each question, with individuals noting key points on flipcharts, while notes highlighting the discussion were taken by the rapporteurs. Following this dialogue, a spokesperson from each table fed back the key points emanating from the discussions. Facilitators recorded this feedback in real time. The facilitator records, the rapporteur notes and the flipcharts containing individual written responses were gathered by the facilitation team and analysed. The key themes were derived from this analysis and form the framework of the findings below. The analysis also sought to include the range of different perspectives on the key questions and these points are noted within the discussion.

Findings

Question 1: Sustainable Energy Education: What is the role of (Sustainable) Energy Education within the sphere of Climate Education and Education for Sustainable Development?

Sustainable Energy Education in Formal Education

In responses to question one¹, it was evident from the world cafe discussions that Sustainable Energy education is perceived as a lifelong process that should begin in early childhood education and be carried through to tertiary education and beyond. It is apparent that the participants believe that Sustainable energy content and related learning outcomes should be included in curricula in early years, primary, post-primary and tertiary education, both as standalone content in curriculum specifications and also as integrated across different curriculum areas. The importance of sustainable energy education being addressed in job-based education and included in programmes within initial and in-service teacher education was also recognised. The World Cafe participants also highlighted the role extra-curricular activities, for example, those school-based activities beyond the formal education curricula could play in supporting sustainable energy education. The need to support teachers in implementing effective energy education was identified, and the need to develop opportunities for students to learn about addressing local sustainable energy challenges.

Clear definitions of Energy Education

During the discussions, participants highlighted the importance of clearly defining the content and learning outcomes for energy education at all levels. Participants emphasised how content should be age appropriate, fact-based and should begin with learners' lived experiences of energy. Such an approach was perceived to enable learners to understand the importance of energy as a central part of everyday life. There was general consensus from the World Cafe participants that energy education should start from local issues moving to consider energy in the context of global issues e.g. climate change or the Sustainable Development Goals. The importance of energy education being implemented through student-led, action-oriented, collaborative, and outdoor education pedagogies was also highlighted. Participants also discussed the role of action-oriented pedagogies in alleviating climate anxiety. The need to evaluate the impact of energy education on learners' attitudes and actions was also recognised by participants.

Energy Education for All

There was consensus that energy education should be for all, involving schools and wider communities, and including an intergenerational focus. Participants also recognised that apathy and potential resistance to Energy Education might serve as a barrier to the pursuit of an inclusive and widespread programme of energy education.

Question 2.: Partnerships and Collaborations: What partnerships and collaborations are required to further education for sustainable development and climate action efforts?

Building on strong foundations

The significant amount of work already taking place in the wider fields of education for sustainable development (ESD) and Climate Change Education (CCE) was acknowledged. Participants also noted that for Energy education to be effective and to achieve its aims, including supporting the transition to renewable energy, multiple actors and knowledge holders need to be involved. These actors include governmental and non-governmental organisations, and other sectors beyond education (e.g. agricultural sector). Participants suggested that from the outset, key stakeholders Department of Education should be brought into the discussion regarding energy education in formal education. In response to this question, participants recognised the potential role SEAI could play in providing leadership in coalescing partnerships and collaborations within formal and informal energy education contexts.

The voices of children and young people

The importance of engaging with children and young people in the development of energy education was widely recognised. There was significant reference to the need for children and young people's voices to be facilitated and supported. It was apparent that there are considerable opportunities for developing real partnerships with children and young people in the development and implementation of effective energy education curricula and programmes.

Partnership and Perspectives

The idea of partnerships occurring within and between different levels - school, local, national - was discussed. Regarding partnerships at school level, it was suggested that these could include not only partnerships that take place in classrooms, but could also consider whole school approaches, engage with school buildings and school grounds, involving parents, engaging with experts and developing partnerships with the wider community.

There was a recognition of the importance of engaging with multiple perspectives when tackling local and global complex issues. At a local level, there are existing examples of potentially successful practice for example the Sustainability Energy Community Programme which could be built upon. At regional level, participants reflected on how councillors and county councils could be engaged to address specific local issues (such as energy and housing). At national level, the need for policy coherence and intergovernmental action was discussed. In wider society, the importance of the media's role in providing positive messages around sustainable energy was highlighted, as was the need to recognise wider societal behavioural shifts and to address climate anxiety. Leadership was seen as of importance across each level, to support bottom-up as well as top-down development.

Question 3.: The Future Role of SEAI: What is SEAI's future role in (Sustainable) Energy education as part of climate change education and education for sustainable development?

Trust and reliability

In an era of misinformation and disinformation, the World Cafe discussions suggested that SEAI could act as a reputable and trusted source of reliable information on energy. In this capacity, SEAI could serve as a all-in-one source for energy education, creating a centralised repository for educational resources, providing energy education in innovative multimedia formats, and making necessary connections between science and society. This information could also potentially consider Ireland's performance in relation to existing energy-related goals.

Fostering collaboration

SEAI could foster collaboration and partnership, scaling up energy education provision, and could support the general public and certain groups currently marginalised within society for example DEIS contexts to gain access to inclusive energy education. This could support all citizens shaping their decision making in relation to personal, national, and global challenges.

Championing Energy Education

SEAI could serve as a champion for energy education in Ireland, empowering children, and young people to engage with energy education, make informed decisions in relation to energy, and to take part in wider intergenerational dialogue on matters of importance related to sustainable energy.

Recommendations

Energy education is recognised as a global priority (Kandpal and Broman, 2014). To meet this call, it is important that energy education is both clearly defined and articulated, and available to all in society. A number of recommendations regarding effective and inclusive energy education and suggestions of the key features of such provision emerged from the World Cafe discussions. These are now presented and contextualised around key educational research literature:

1. Holistic models of education are recognised as imperative in responding to global crises (Cantell et al., 2019). Energy education content, including knowledge, skills, and values, should be included within early years, primary, post primary and tertiary curricula and programmes.
2. Best education practice recognises the need for teaching to be responsive to the needs of learners. Different age groups have different capabilities for understanding sustainable energy. To this extent, energy education programmes at all levels should include age-appropriate definitions and descriptors of sustainable energy education, to further its conception as a lifelong education process.
3. The importance of personally relevant education, delivered through participatory approaches is clearly recognised (Monroe et al, 2017). Energy education programmes should ensure a focus on energy consumption as both an individual issue, connected to real world experience, but also as a collective issue, while constantly being framed through active participatory approaches.
4. Effective teacher education for sustainability can have a positive impact on teachers' professional practice (Murphy et al., 2020) and children's learning (Murphy et al., 2021). Energy education should be addressed in Initial Teacher Education (ITE) and Continuing Professional Learning (CPL) programmes to support teachers through evidence-based practice.
5. Widespread evidence demonstrates that individuals and groups may experience exclusion from education and from certain forms of education. Energy education for all should be a priority. Those typically excluded from educational provision should be ensured access to programmes and have their learning needs met through the provision of energy education.

Participants noted the importance of considering action-oriented, solution-focused, energy-related approaches as a response to climate anxiety, supporting informed decision making on personal energy consumption. In relation to taking action , the following recommendations emerged:

1. Given the complex nature of global sustainability issues with which we are faced (Lehtonen et al., 2019), there is a need for learners to consider developments on multiple levels. Energy education programmes should support informed decision making on personal energy consumption, but also nurture empowerment for participation in local, regional, national, and international decision making.
2. There is increasing exploration of the complex relationship between climate anxiety and environmental action (Whitmarsh et al., 2022). The potential of action-oriented, solution-focused, energy-related approaches as a response to climate breakdown should be explored.
3. Innovative approaches to evaluating attitudinal change and action stemming from energy education should be developed and tested.

Participants put forward recommendations regarding what they believed SEAI could explore going forward.

1. Given the wealth of emerging climate change education practice within the Irish context (Waldron et al., 2019), key pillars of existing practice upon which to base future developments need to be developed.
2. Considering the pervasive nature of climate misinformation (Treen et al., 2020), there is a significant opportunity for SEAI to provide fact-based, solution-focused input into energy education interventions.
3. There is some evidence that carefully constructed cross-sectoral collaborations can support effective education programmes (Tarozzi & Mallon, 2019). To foster such opportunities, there is an opportunity for SEAI to form and lead a broad network of energy education stakeholders, for example teachers, teacher educators, curriculum developers and educational researchers who would input into the development of educational interventions concerning energy education.
4. There is an increasing recognition of the important role that children and young people should, can and will play in the shaping of responses to significant societal challenges. In a widely utilised framework, Lundy (2007) recognises that young people should not only have their voices heard, but should be facilitated to express their views on matters affecting them, be granted an audience for these perspectives, and influence the decision-making processes. SEAI should develop partnerships with children and young people to advance energy education as a central part of a response towards the twin threat of climate change and biodiversity loss.

Conclusions

This report has synthesised the key findings from a World Cafe event exploring the future of (Sustainable) energy education within the sphere of climate education and education for sustainable development, the partnerships required to further the positive enactment of inclusive energy education, and the role of SEAI within the broader network of energy education stakeholders. Drawing on data gathered during the World Cafe event, the report found that participants suggested a preference for a clearly defined and inclusive energy education model, integrated across the education system. They felt that practices should build on existing strengths, should develop partnerships, and should include the perspectives of children and young people. Participants believed that SEAI should champion energy education, as a trusted body positioned at the centre of a wider collaborative network. Stemming from these findings, the report has suggested several recommendations which concern the focus and form of energy education, and the potential role of SEAI in leading this transformation. Finally, this report recognises that there were significant stakeholder groups absent from this preliminary process for example teachers, children, and young people and these voices and perspectives will undoubtedly enrich further discussions regarding the future of energy education in Ireland.

Reference List

Cantell, H., Tolppanen, S., Aarnio-Linnanvuori, E., & Lehtonen, A. (2019). Bicycle model on climate change education: Presenting and evaluating a model. *Environmental Education Research*, 25(5), 717-731.

Kandpal, T. C., & Broman, L. (2014). Renewable energy education: A global status review. *Renewable and Sustainable Energy Reviews*, 34, 300-324.

Lehtonen, A., Salonen, A. O., & Cantell, H. (2019). Climate change education: A new approach for a world of wicked problems. Sustainability, human well-being, and the future of education, 339-374.

Lundy, L. (2007). 'Voice' is not enough: conceptualising Article 12 of the United Nations Convention on the Rights of the Child. *British educational research journal*, 33(6), 927-942.

Murphy, C., Smith, G., Mallon, B., & Redman, E. (2020). Teaching about sustainability through inquiry-based science in Irish primary classrooms: the impact of a professional development programme on teacher self-efficacy, competence and pedagogy. *Environmental Education Research*, 26(8), 1112-1136.

Murphy, C., Mallon, B., Smith, G., Kelly, O., Pitsia, V., & Martinez Sainz, G. (2021). The influence of a teachers' professional development programme on primary school pupils' understanding of and attitudes towards sustainability. *Environmental Education Research*, 27(7), 1011-1036.

Treen, K. M. D. I., Williams, H. T., & O'Neill, S. J. (2020). Online misinformation about climate change. *Wiley Interdisciplinary Reviews: Climate Change*, 11(5), e665.

Waldron, F., Mallon, B., Barry, M., & Martinez Sainz, G. (2020). Climate Change Education in Ireland: Emerging Practice in a Context of Resistance. *Ireland and the Climate Crisis*, 231-248.

Whitmarsh, L., Player, L., Jiongco, A., James, M., Williams, M., Marks, E., & Kennedy-Williams, P. (2022). Climate anxiety: What predicts it and how is it related to climate action? *Journal of Environmental Psychology*, 83, 101866.

SEAI Education and Youth Programme

SEAI Education and Youth Programme supports children and young people and their educators in engaging in sustainable energy and climate education. During the last 30 years we have engaged hundreds of thousands of young people in energy and climate education. We continue to provide leadership in sustainable energy and climate education for children and young people in Ireland.

Our Mission

SEAI Education and Youth Programme's mission is to inform and educate children and young people about sustainable energy and how sustainable energy use is a key pillar of climate action.

Our Strategic Objectives

- To be leaders in sustainable energy and climate change education for young people.
- Increasing awareness of SEAI's educational resources for young people in both school and community settings.
- Providing young people with knowledge about the latest technology and government policies in sustainability at both local and global levels.
- Supporting and encouraging youth engagement and action towards sustainable living.
- Engaging with all levels of the youth education sector, both formal and informal.

SEAI Energy Education Outreach

SEAI Education and Youth Programme offers a comprehensive range of curriculum-linked resources and workshops on energy and climate action for students from Junior Infants to Transition Year. Our resources and workshops are developed in collaboration with environmental education experts and are continually updated and aligned with the Irish curriculum. Our energy education resources and workshops are highly respected by the teachers who use them.

Moving forward, our goal is to expand our educational efforts to early years and Leaving Certificate students and reach out to young people in informal education settings through SEAI's Sustainable Energy Communities network. Our resources and workshops will be continually updated to align with all curricula.

In 2023 18,714 students from schools across Ireland participated in SEAI energy workshops as part of SEAI Education and Youth programme. Under this programme, 681 student workshops were delivered by An Taisce and Science Foundation Ireland on behalf of SEAI.

SEAI Education and Youth Programme provided energy education at community -based energy events including Wicklow Energy Day, Fota Island & Cork Cuts Carbon Event, SEC Skerries festival, SEC Energy Day, Arklow, Munster Maths and Science Festival and Let's Talk Science Festival, bringing the total programme reach to over 20,000 young people across Ireland.

Year/Energy Engagement	2014	2018	2021 (pandemic)	2023
Workshops	631	935	182	681
Number of students reached	20,956	22,788	4,548	18,714

We hope to be in position in the next 4 years to almost double our programme reach with ambitious targets to engage with every student in Ireland twice during their primary education and once during their secondary education and significantly increase our outreach in early years education.

Energy Education lesson plans and online resources

SEAI Education and Youth Programme offers a wealth of curriculum-linked teaching resources focusing on sustainable energy and climate change. There are lesson plans available from Junior Infants to 6th Class that were developed in collaboration with DCU School of STEM Education, Innovation, and Global Studies. The lesson plans are currently under review for updates.

Guzzler's Party and Climate SOS books & related resources

Guzzlers Party

Guzzler's Party is an illustrated story book aimed at 4 – 6-year-old children. The book shows how children can reduce their energy use, giving them practical ways to take climate action and inspire them from a young age. It also helps parents to initiate discussions about climate change at home in an age-appropriate manner without causing anxiety. Guzzler's Party is also available in Irish. Both books have been developed for SEAI by writer Lucinda Jacob, illustrator Alan Nolan and edited by Dr Orla Kelly from DCU, Institute of Education.

In 2023, Guzzler's Party teaching resources were released to support teaching of climate change and energy. This workbook uses interactive activities to communicate the importance of energy in our lives and to introduce the idea of saving energy. This resource was researched and developed by Associate Professor, Dr. Orla Kelly.

Climate SOS

Climate SOS is a non-fiction, illustrated storybook that promotes an awareness of climate change in a way that relates to the lives and day-to-day experiences of children. The book is aimed at 8-12-year-olds and is available to all schools as a hard copy and e-book www.seai.ie/climatesos. Climate SOS is also available in Irish.

Energy in Ireland animations for post primary students

Energy in Ireland animated videos

The Energy in Ireland animated videos have been created for 12 – 15 year old students and their educators to help them understand and explore the current climate change situation and what they can do to help.

This initiative is an ongoing collaboration between the SEAI Statistics and SEAI Education and Youth teams with external input from teachers and education specialists. The animations present SEAI's annual 'Energy In Ireland 2022' report on Ireland's energy transition and climate data in a way that is accessible and easy to understand for young people.. The videos and linked activities are available at [Energy in Ireland | Schools | SEAI](#)

Encouraging Youth Voice in Climate Discourse in Ireland

The SEAI Education & Youth Programme encourages youth participation in the national climate discussion by supporting initiatives that empower young people to apply their classroom knowledge and share their climate ideas with their peers and the wider public. We also aim the SEAI Energy Education Forum to offer a platform for the youth voices to be heard going forward.

ECO-UNESCO Young Environmentalist Awards

SEAI is also sponsoring the ECO-UNESCO Young Environmentalist Awards 2024 Energy Category featuring energy-related action projects which include efforts to conserve energy, to raise awareness of energy-related sustainability issues, and to support the implementation of renewables in different settings such as in the home, school, or local community.

The Irish Schools Sustainability Network (ISSN) 5mins of Sustainability initiative

SEAI Education and Youth Programme is supporting The Irish Schools Sustainability Network (ISSN) Initiatives that engage schools in climate conversations and encourages young people to become climate champions.

SEAI Energy Education Forum

The inaugural SEAI Energy Education Forum was organised on October 25th, 2023 in Richmond Barracks, Dublin. We aspire for this event to be a regular gathering for key decision-makers in the fields of energy, climate education, and youth engagement. Our goal is to establish a collaborative platform of partnerships that can inform the work of SEAI in energy and climate education outreach, furthering our mission to support national efforts in this area in the future.

During our inaugural Forum, we participated in a high-level policy discussion on the future of sustainable energy education and youth engagement in Ireland. In this report, we will showcase the key outcomes of the Forum and the insights gathered from the World Café session.

SEAI Energy Education Forum news and updates can be found [here](#)





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