

The background of the slide is a light yellow-green color, decorated with a pattern of overlapping triangles in various shades of green, ranging from light lime to dark forest green. These triangles are arranged in a way that creates a sense of depth and movement, particularly around the edges of the slide.

Teaching for the future

Opportunities in Climate Education



A brief introduction to my research & me



Hello, I'm Charlotte!



I'm an adventurous,
nature-loving, playful
human fuelled by
creativity & a desire to
make a positive change
no matter how small.

CAREER

Educator (S.I. / ESO / Lecturer)

Game Designer (TTRPGs)

Multidisciplinary Designer

Business Owner

Peer Engagement

Illustrator

Creative, ethical problem-solver



The Research Paper

**How can the DfE's Sustainability &
Climate Change Policy (SCCP)
help to inform Isle of Man DESC's
Climate Change Action Plan (CCAP)?**

Table of Contents

01

SCCP overview

Policy outline &
relevance

02

Curriculum

Ideology & theory

03

CCAP overview

I.o.M. Plan &
implications

04

Learners

Attitude
Engagement
Workforce

05

Opportunities

Collaborations
Biosphere
Curriculum
Resources

06

Recommendations

Policy
Strategy
Curriculum

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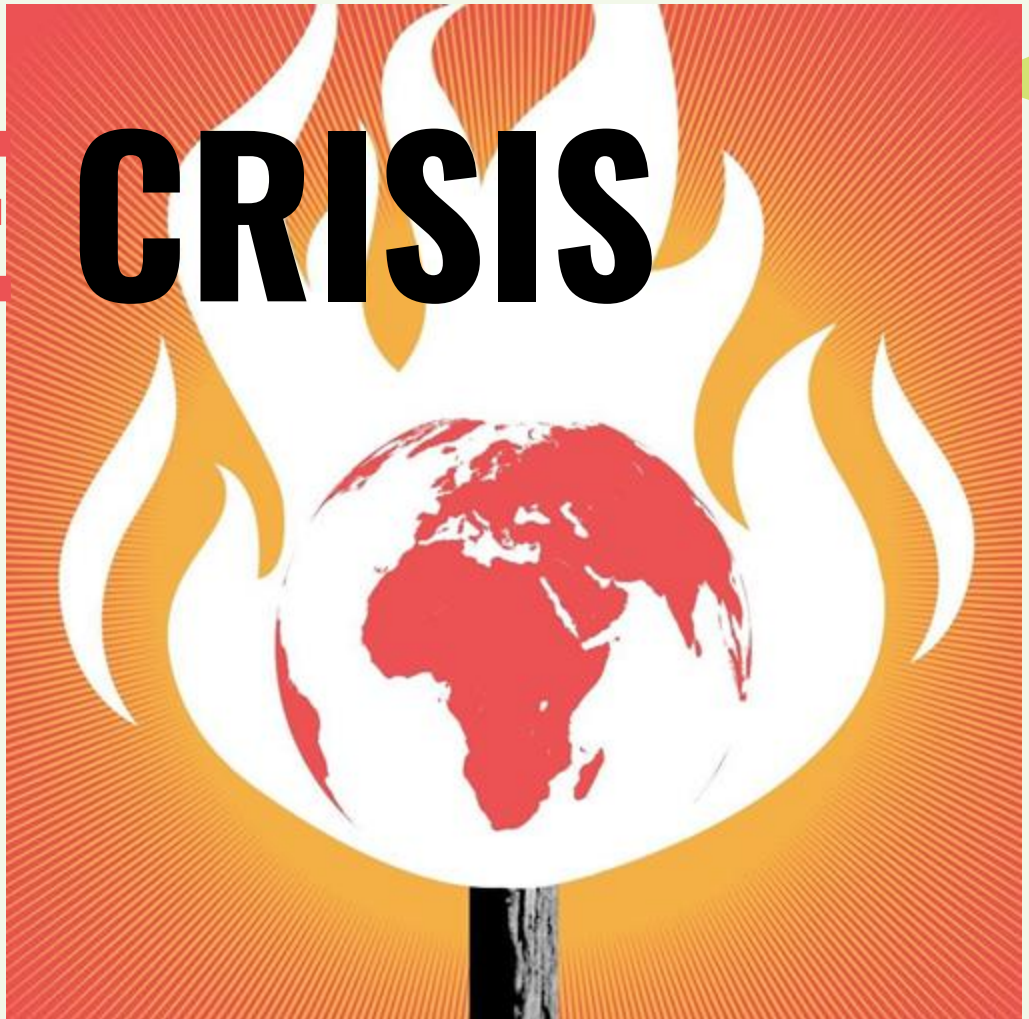
BUT FIRST

Why should sustainability & climate change
factor into mainstream education?

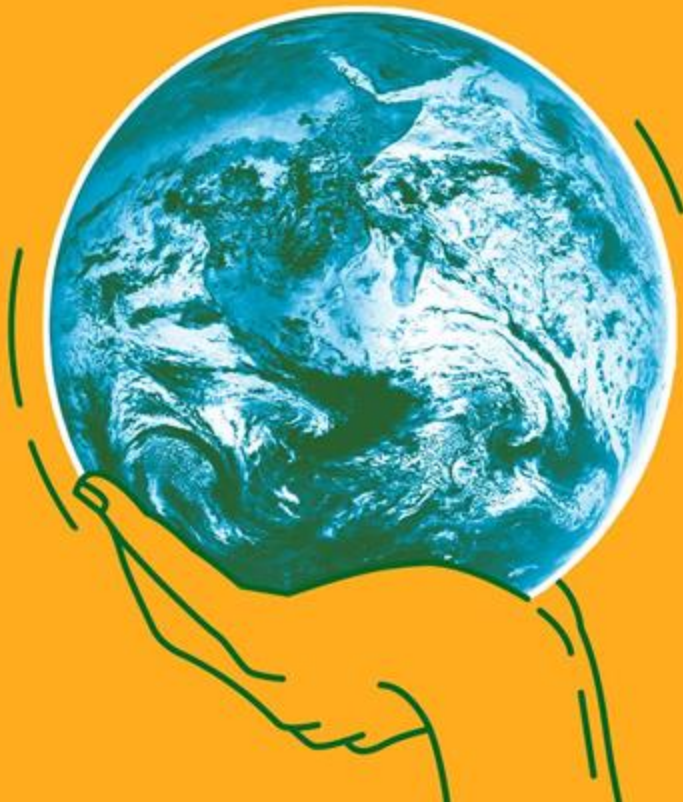
CLIMATE CRISIS

Between 1970 and 2021,
extreme weather and
climate-related events
caused:

- estimated economic losses of US **\$4.3 trillion** (\$84.3 billion per year)
- **Over 2 million deaths**
- 90% of this occurred in developing countries



The solution



“

To... preserve a livable planet,
global temperature increase needs to
be ...reduced by

45% by 2030 and reach

net zero by 2050.

”

— The United Nations

Effect on education

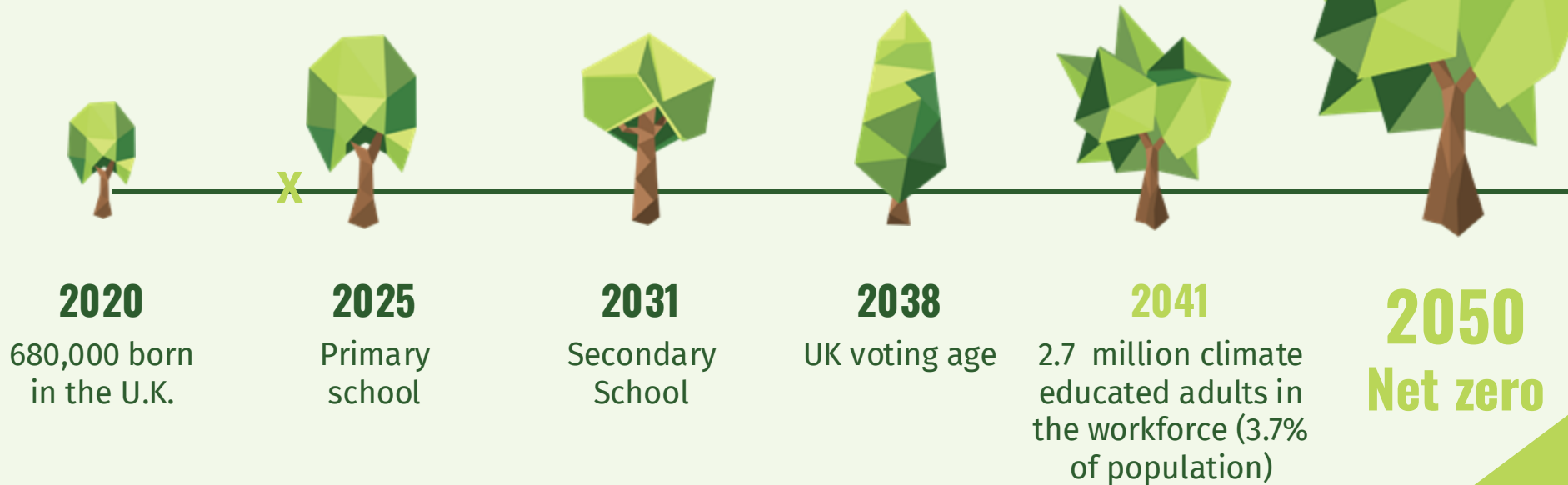
400 million students globally experienced school closures from extreme weather since **2022**

Climate crisis is hitting education the hardest in **low-income countries**: **18 school days lost** annually on average, compared to **2.4 days** in wealthier nations.

On average across the world, only **1.5% of climate finance** goes to education

(World Bank)

Student Timeline



The background of the entire image is composed of various-sized triangles in different shades of green, creating a low-poly, abstract geometric pattern. The triangles are arranged in a way that they seem to radiate from the center, with some pointing towards the corners and others towards the center.

EDUCATED

About climate change & sustainability

EQUIPPED

To reach Net Zero targets

INVESTED

In tackling the Global Climate Crisis



01

DfE's Sustainability & Climate Change Policy

A strategy for the education & children's
services systems

April 2022



01

Climate education

Increasing educator training & support

02

Green Skills & Careers

Train, re-train & upskill opportunities
for Green Careers

03

The Education Estate

Energy saving infrastructure & operations

04

Operations & Supply Chain

Embedding sustainability throughout

05

Access to Nature

Opportunities for
practical, outdoor learning



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SCCP: learner-centred initiatives

01

Natural History
G.C.S.E. (non-EBacc)

02

Primary Science Model
Curriculum (emphasis on
nature) by 2023

03

Fund National
Education Nature
Park & Climate Action
Awards (NHM)

SCCP: institutional compliance

03

1 Carbon Literate (CL)
trained person per
school by 2023

04

Emissions reports
recorded by each
school by 2024

05

DfE Annual Progress
Reports published

06

Ban single-use
plastics by 2025

07

Annual “climate
literacy survey”

08

A “sustainable
assessment model”

09

“Sustainability
Leads” at every
school by 2025

10

Teaching standard &
support for promotion
of Green Careers

02

CURRICULUM THEORY

Scholar academic

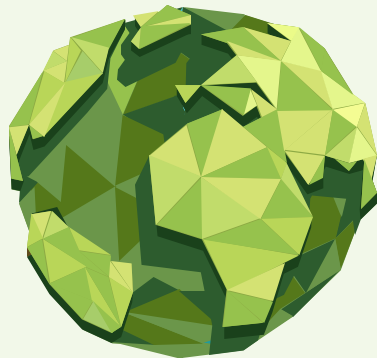
Tangible but minimalist

Focus on sciences & new
Natural History degree

Social Efficiency

Strongly encouraged

Practical, outdoor-based
learning, Green Careers, local &
international collaboration



Social Reconstruction

Strong

Working towards a sustainable,
Global future, continuous
stakeholder engagement

Learner-centred

Encouraged

Outdoor based learning, eco-
clubs encouraged, learner well-
being, inclusivity

Pedagogy of hope

“Our work as educators is not to lead our students to face the future with despair... The future is going to pose serious dangers to our societies and the diversity of life on earth, and we need ways of imagining the future our children will want to live in”

(Kool, 2017)

03

DESC's

Climate Change Action Plan

2023 - 2024





01

Identify emissions

Understand carbon impact of buildings

02

Reduce energy consumption

Audits & long term plans

03

Reduce waste

Look at recyclable options

04

Adapt buildings

Seek carbon reductions

05

Operations & awareness

Understand “day to day”



01

Identify emissions

Understand carbon impact of buildings

02

Reduce energy consumption

Audits & long term plans

03

Reduce waste

Look at recyclable options

04

Adapt buildings

Seek carbon reductions

05

Operations & awareness

Understand “day to day”

PROs



Regular progress reviews

Annual & cross-department

01

Collaboration

Cites collaboration with external organisations & alignment with global climate change initiatives

02

Eco-schools

Partnership with and training for teachers towards Eco-School framework

03

DESC Strategic Plan 2021 - 2026

CCAP aligns with **SP4** aims to:

- Increase climate awareness in schools
- Achieve Net Zero by 2050





Isle of Man Climate Change Strategy 2022 - 2027

Strong alignment

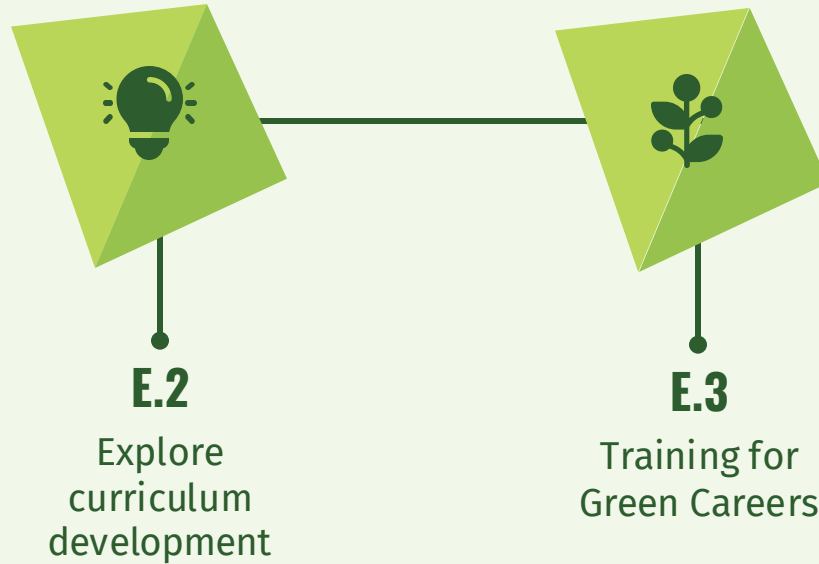


—● E.2


Continue to raise awareness and understanding of climate change and sustainability at all stages of education.

IoM Climate Change Strategy 2022 - 2027

More alignment desirable



The Isle of Man is not alone



“By 2021, still almost half of international curricula had **no reference to climate change**, despite 1974 UNESCO recommendations.”

(UNESCO, 2021)

Globally Climate Change Education (CCE) is not a priority - why?

1988

Education Reform Act & introduction of the **National Curriculum**

Core Subjects

English, mathematics, & science.

Foundation Subjects

Ensuring a broad education.

Key Stages

Four, corresponding to pupils' ages.

TODAY

The core structure of the curriculum has not changed



Climate key events

1989

The U.N.'s Intergovernmental Panel on Climate Change (IPCC) established in response to growing concerns about and scientific evidence of climate change caused by human impact

IPCC's goals were to :

- assess climate change science
- Inform Policy making
- Raise public awareness
- Increase climate change education

1992

Kyoto Protocol: First international treaty to committed to reducing greenhouse gas emissions.

2013/14

IPCC 5th Assessment Report: Focus on rising temperatures, ocean acidification, extreme weather events & evidence of human impact.

2015

Paris Agreement: Globally participated climate accord.

2022

DfE's Sustainability & Climate Change Policy

ICT & Computing

1989

World Wide Web

1993

First user-friendly, graphical browsers

1998

Google launches

2004

Facebook launches

2007

iPhone launches

2014

ICT curriculum replaced by the **Computing** curriculum.

Focus on: coding, programming, and computational thinking skills, rather than just learning to use existing software.

Reframing Climate Education

- Holistic essential skills:
 - Improve social & emotional health and wellbeing
 - Increases employability
 - Improves social mobility
 - Increases inclusion & social equity
- Increased learner engagement – relevant use-value / student-led
- Employment generating – lack of green skills in huge growth area

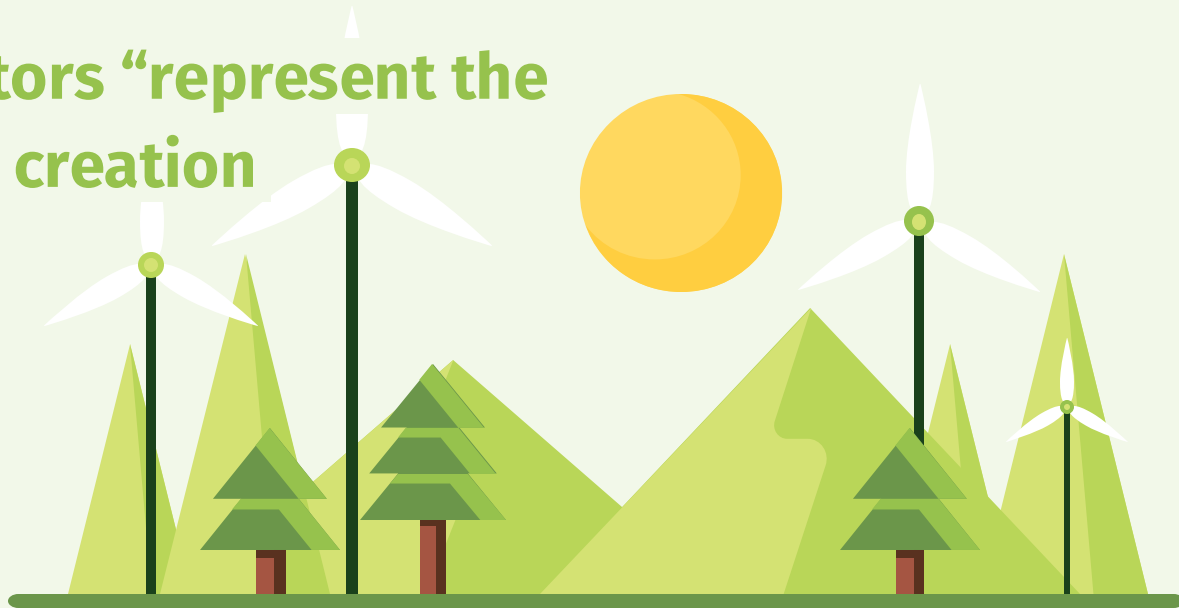
+ Tangible carbon emission reduction!

Employment opportunities

Clean energy

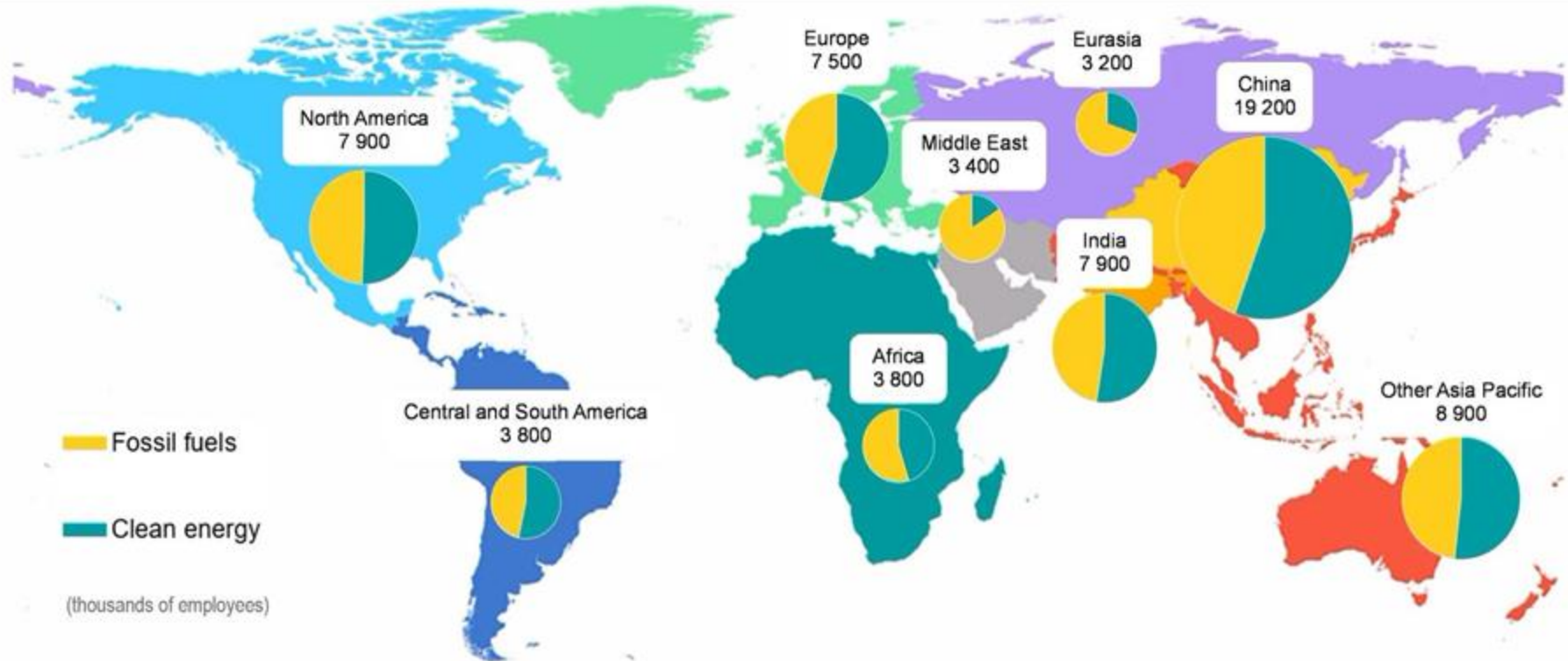
Climate-friendly sectors “represent the highest employment creation potential.”

[2022 International Energy Agency Report](#)



Clean energy

- Clean energy employment surpassed that of fossil fuels in 2021



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Climate Education & CO2 emissions



A 2020 study found that...

...if **16%** of secondary school students around the world
(in middle & high income countries)

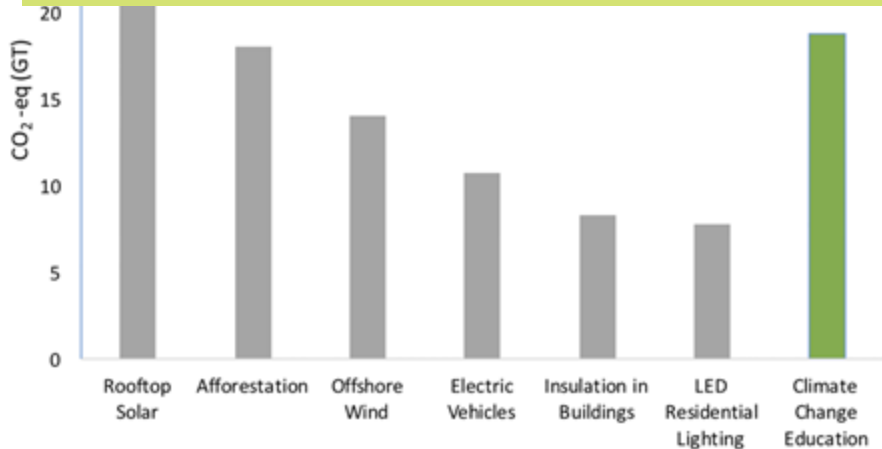
studied climate change

19 gigatons of CO₂ emissions would be cut **by 2050**

What does that look like?

Carbon Reduction by 2050

Climate Education = Climate CHANGE



mitigation strategies due to:

- Development of students' personal connections to climate change solutions
- Subsequent change in behaviours & habits

The background of the slide is composed of various-sized triangles in shades of green and yellow, arranged in a fragmented, geometric pattern. The triangles are scattered across the slide, with some overlapping and others isolated, creating a modern, abstract aesthetic.

04

Learners

New Attitudes & Contexts

Relevance to Education?

Over **70%**
of young people feel
'hopeless' in response to
the climate crisis

[Cambridge International](#)



Photo: Roy

Eco-Anxiety

Over **70%**
of 14-18 year olds want to
Learn more about
climate change in school

[British Science Association](#)



Photo: Roy

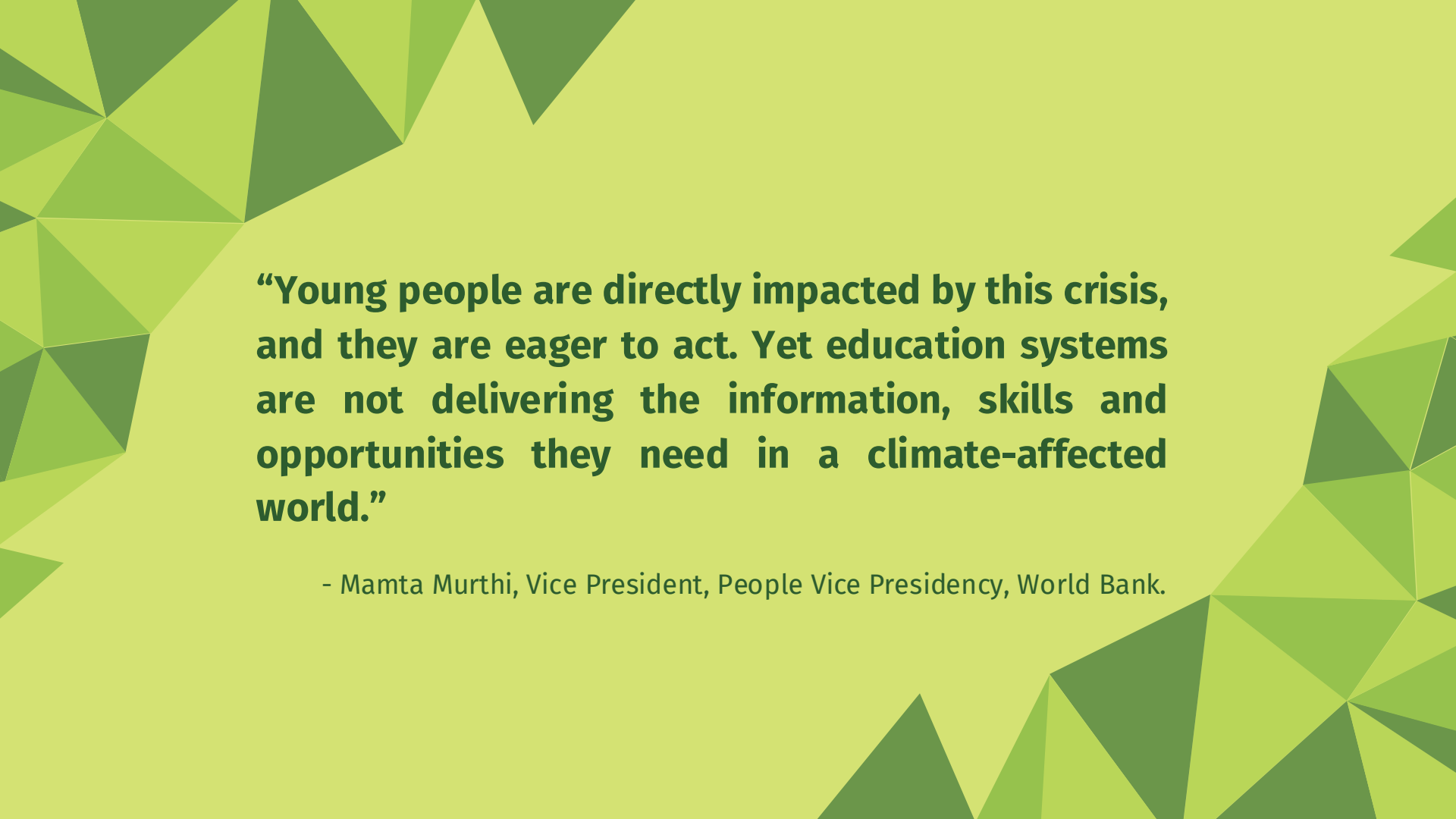
Eco-Anxiety

68% of 14-18 year olds feel that climate change education should be included **across all subjects**

[British Science Association](#)



Photo: Roy

The background of the slide is a light green color, decorated with abstract geometric patterns of various shades of green triangles and polygons, primarily located along the top, bottom, and side edges, creating a modern, low-poly aesthetic.

“Young people are directly impacted by this crisis, and they are eager to act. Yet education systems are not delivering the information, skills and opportunities they need in a climate-affected world.”

- Mamta Murthi, Vice President, People Vice Presidency, World Bank.

Attendance

The Big Ask survey

- In 2021 – **84%** said they were happy with life at school or college
- In 2024 – reduced to **60%**
- Autumn 2019 – overall absence rate **4.9%** / persistent absences 13.1%
- Spring term 2024 – this increased to **7.3%** / persistent absences 21.9%

Opportunities

“a leading, sustainable Island”

Curriculum Agency

DESC's Strategic Plan 2021-2026: “a revived modern curriculum”

“the freedom to deliver lessons relevant to the needs and interests of pupils in each school community” (Curran, 2019)

- 1.9. Climate change is a pervasive phenomenon that requires a multidisciplinary approach i.e. permeation across all areas of the curriculum so that it becomes natural and less daunting. For example, not just restricted to science or geography lessons but in home economics (change in food production, supply and diet), PSE (personal and social impact and concerns), language (mass migration), art (changing landscape) etc.

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What can we learn from Wales?

The Curriculum and Assessment (Wales) Act 2021

Integral Skills

- Creativity and innovation
- Critical thinking and problem-solving
- Personal effectiveness
- Planning and organising

Plus wider requirements for institutions to align with acts promoting **well-being, sustainable development, human rights & additional learning needs.**

Areas of learning and experience



Expressive Arts



Health and Well-being



Humanities



Languages, Literacy and Communication



Mathematics and Numeracy



Science and Technology

Collaboration & Partnerships



National Education Nature Park

DfE collaboration with **Natural History Museum & Royal Horticultural Society**



James Curran's 2019 IMPACT Report



2.30. Manx Wildlife Trust ("MWT") already undertake work with Isle of Man schools that is firmly linked to the local environment and helpful to show student show climate change affects their surroundings e.g. Rock Pooling – studies carried out on the thickness of limpet shells due to wave energy; Carbon in eel grass and wetland areas; and Natural Habitats – talks (vary school to school).

2.34. Similarly, whilst all Isle of Man schools signed up to be "Eco Schools" there are no milestones or measurable actions required – this is something DESC is aware of and planning to remediate in this academic year.

2.43. DESC have advised that all schools include some element of climate science in their curricula although establishing the detail will take some time.

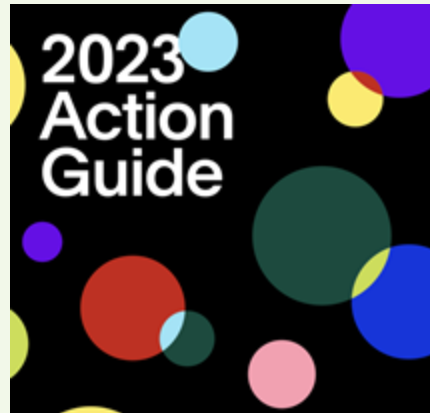
Resource Availability



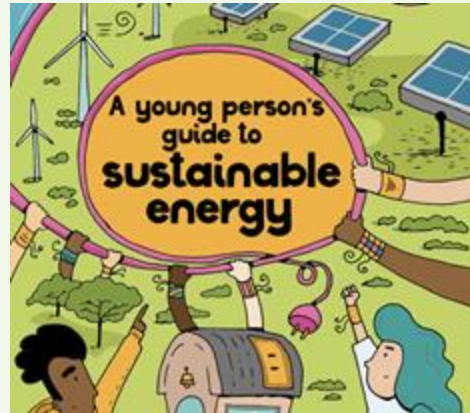
- Free
- Numerous
- Time intensive
- Needs curation



Project
Drawdown



Ted ex



Unicef



Lego



WWF

Barriers



“there is no shortage of available climate education materials.

**However, curation, indexing, contextualization of, and free,
easy access to these materials are lacking”**

(Teach for All, 2024)

UNESCO

Greening curriculum guidance

July 2024





Methodology & free teacher CPD

Learner-centred
Experiential
Reflective



06

Recommendations

I.O.M Policy opportunities



Separate Education

From operations & estate goals



Sustainability Leads

Introduce to all schools



CL Training

Available for all civil
servants...



Nature-based

Incorporate outdoor &
practical learning

Strategic priorities

CPD Standard

Mandated

Funding

Commitment to
Government backing

Learner Agency

Collaboration with the
key stakeholders

Curriculum

Overhaul for 21st C

Holistic

Not just STEM subjects

Nature-connectedness

Increased focus on
outdoor learning

Global Skills

Collaboration

Communication
International Relations
New Perspectives
Self-awareness



Thinking Frameworks

Systems thinking
Critical thinking
Creative thinking
Problem-solving

Planning

Research
Organisation
Analysis



Health & Wellbeing

Emotional intelligence
Social Justice
Equality

**Teach “the leaders of tomorrow... to
think sustainably no matter their**



(Corn, 2020)

Soon we will ALL be teaching climate sustainability



The question is how soon & what will it look like?

A livable planet

There is no better
investment.

