

Participatory Engagement | Learning by doing
Co-creation of LTES with communities from
local to global, farmers to presidents

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IRENA, Bonn, GERMANY | December 7th 2022

Outline | Mapping the Journey of this Trilogy

1. IRELAND+EU

- Publishing First Net Zero scenarios for Ireland
- Development of TIMES IRELAND Model (TIM)
- LTES Dialogue with Gov Climate-Action committees
- Co-Creation of relevant scenarios to communities
 - “IMAGINING2050”
 - ucc.ie/en/imagining2050/
- Carbon Budgets are now enshrined in Law using TIM

2. IEA-ETSAP

- Development of global ESOM + LTES research communities.
- Teaching Modeling tools for decision makers – creates iterative long-term relationships



3. CGEP in NYC

- Development ESOMs as tool for dialogue at CGEP.
- Honest independent broker of dialogue on energy transition, energy security, science-based policy targets using data driven dialogue.



DELIBERATIVE FUTURES WORKSHOP

To learn more view our [animation](https://www.ucc.ie/en/imagining2050)
at www.ucc.ie/en/imagining2050



EXCHANGE POINTS AND QUESTIONS:



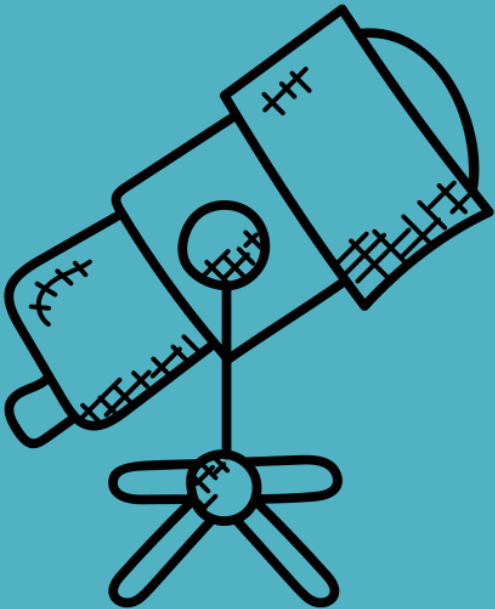
- What forms of community engagement relative to climate action have you been involved? And how did the process evolve?
- Are there plans to run or be involved in further community engagement work? If so, what will these look like?
- With respect to the future thinking tools, which aspects would be useful and in what context?
- What form of impact do you expect to draw from community engagement initiatives?

BENEFITS OF ADOPTING A FUTURES-THINKING APPROACH

Futures-thinking is a growing field which enhances trust and collective visioning. It widens the debate over the future of society under growing uncertainty due to climate and other major societal issues. It suggests innovative co-creative tools which reinforce ties between civil society, policy makers and researchers.

ITS USEFUL FOR EXPLORING ISSUES SUCH AS:

1. problematic trends,
2. influences stemming from the past,
3. the problem and timing of making crucial decisions,
4. emergent dynamics,
5. the likelihood of unforeseen events,
6. agency and stakeholder influence for promoting alternative preferred futures,
7. anticipating the need to evaluate, monitor and revisit existing scenarios





TOOLS FOR ENGAGING WITH



Deliberative & future-oriented approach



Guiding Principles

- 1. DIVERSITY**
2. VOICE
3. CONSIDERED JUDGEMENT

- 2. VOICE**
- Gender
 - Social inequality
 - Values & experiences

- PROCESS INVOLVES**
- Listening,
 - learning,
 - discussing,
 - co-creating,
 - deciding

- 1. DIVERSITY**
- Open Invitation
 - Time & Place
 - Caring
 - Accessibility

- 3. CONSIDERED JUDGEMENT**
- Fact sharing
 - Empathy
 - Dialogue facilitation

- KEY QUESTIONS:**
- How are participants recruited?
 - How is the topic chosen?
 - How is the information and expertise presented chosen?
 - Are the discussions facilitated?
 - How are decisions made?

ABOUT THE TOOLS:

In establishing tools for future-thinking based on deliberative processes we tackle difficulties and uncertainties associated with the future as volatile, unstable and unpredictable.

To support the application of these tools we showcase the work carried out by the Imagining2050 project, which includes clear examples of how each tool was employed in the project.

You can adapted, mix and match these tools and processes to create an exciting menu of creative communication and engagement to suit your needs.

FUTURE-ORIENTED & DELIBERATIVE TOOLS

Tools have been rated by level difficulty, based on materials needed, preparation time, experience and ease of participant involvement.



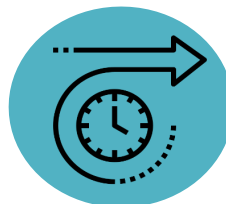
EASY



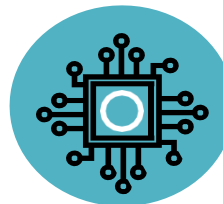
MEDIUM



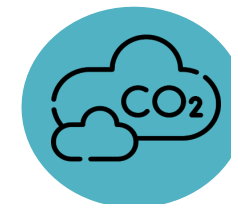
HARD



Future-oriented



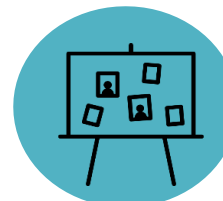
Deliberative Engagement



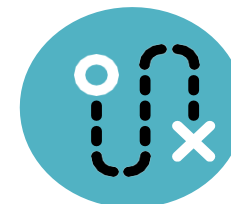
Sense-making



Empathy Mapping



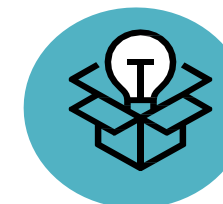
Storyboarding



Community Mapping



Audience Polls



Ballot

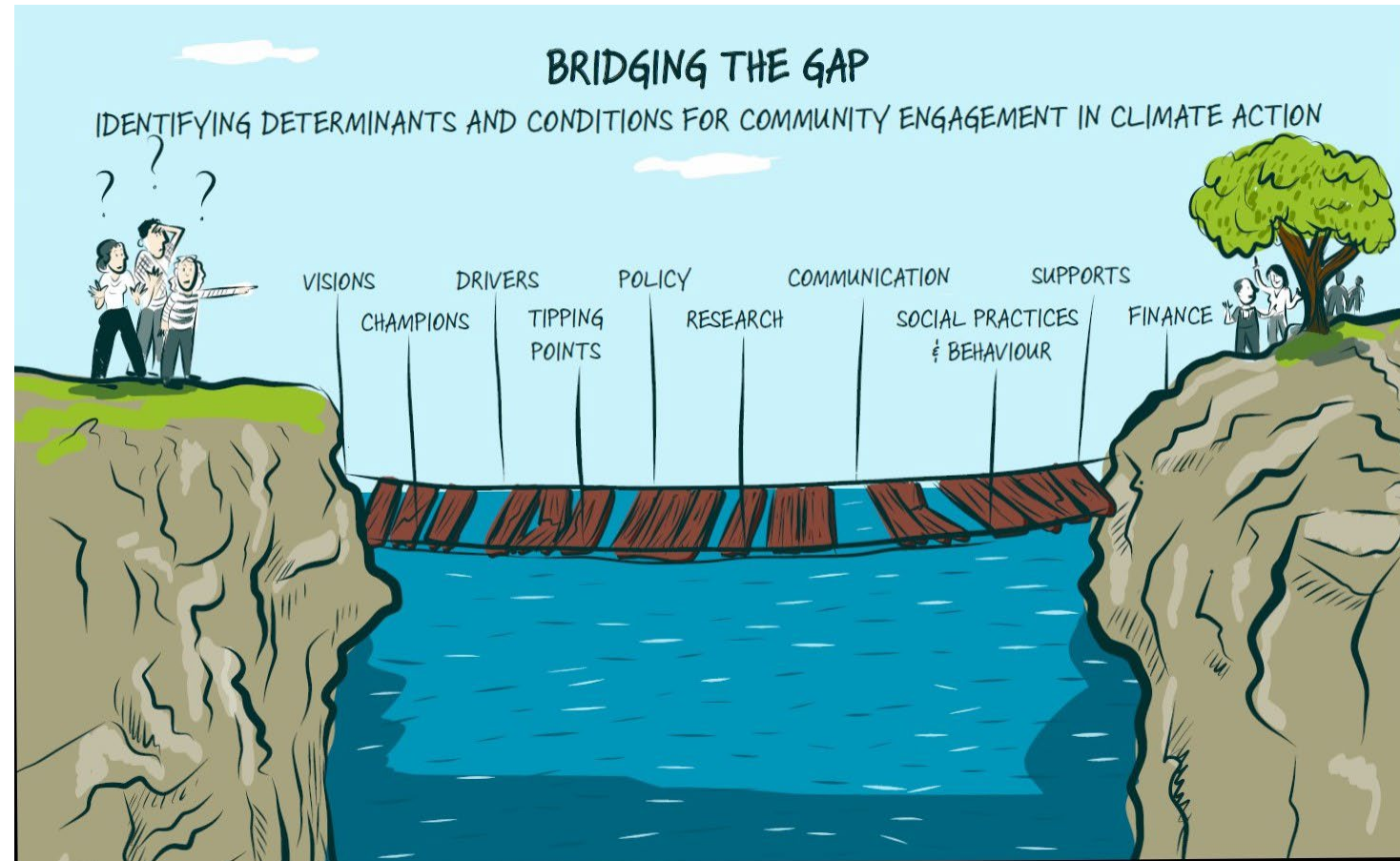


Evaluation

DISCUSSION POINTS

OTHER PROJECTS/INITIATIVES?

- Key Strengths?
- Resources?
- Engagement opportunities?



ENERGY TECHNOLOGY SYSTEMS ANALYSIS PROGRAMME

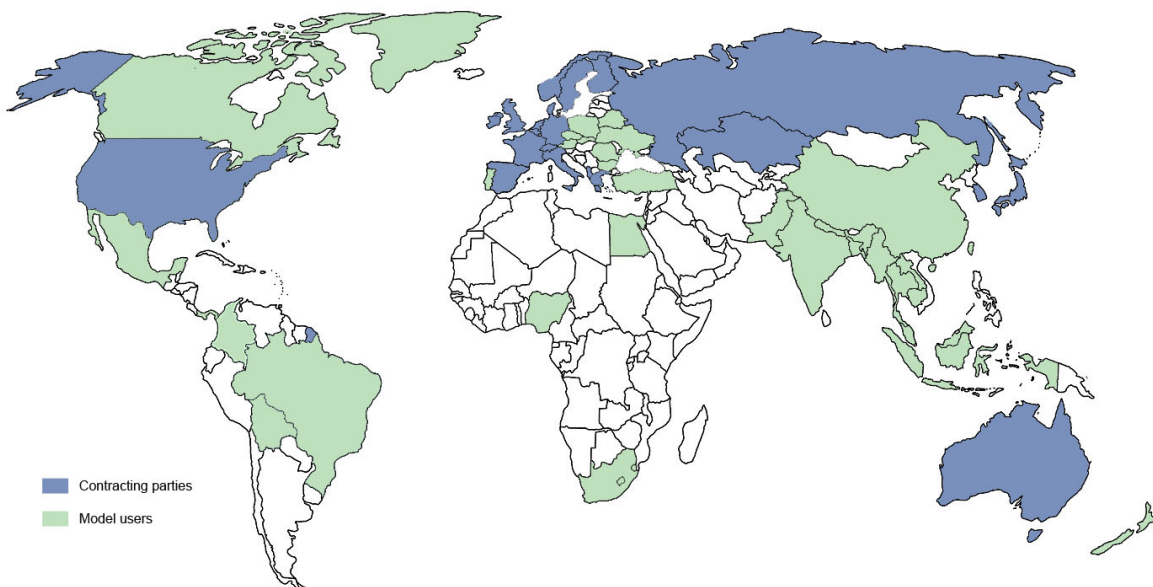
an IEA - TECHNOLOGY COLLABORATION
PROGRAMME

The logo for the Energy Technology Systems Analysis Programme (etsap). It features the lowercase letters 'et' in a blue sans-serif font, followed by a stylized graphic of three curved lines representing energy or a system, and then the lowercase letters 'ap' in the same blue sans-serif font.

ETSAP in a nutshell

- One of 39 **IEA Technology Collaboration Programmes**
www.iea.org/tcp/
- 40 years international **cooperation** on energy **systems** modelling.
- **Developing and maintaining** MARKAL and TIMES model generators.
- **Assisting policy decisions** by modelling possible future **energy pathways**.
- Focus on key role of **technology** to meet energy and environmental goals.
- Organising biannual **workshops** and **training on the use of TIMES**.

ETSAP in a nutshell



Unique network of Energy Modelling teams from almost seventy countries use the MARKAL/TIMES family of models to support decision making in energy policy and analyse energy systems development.

A multilateral international agreement. The contracting parties are the governments of twenty countries, the European Commission and two sponsor foundations.



Policy relevance

- The work of ETSAP is directly linked with policy making. ETSAP tools are currently used by:
 - EU-JRC-IET to analyse technology development.
 - IEA in the ETP publication.
 - National teams informing national Governments.
 - Energy Modelling Forum (EMF) researchers examining robust transition policies towards climate sustainable systems after 2100.
 - MARKAL/TIMES is listed as one of the four selected modelling tools in the UNFCCC guide for preparing the national communications for non-Annex I parties.

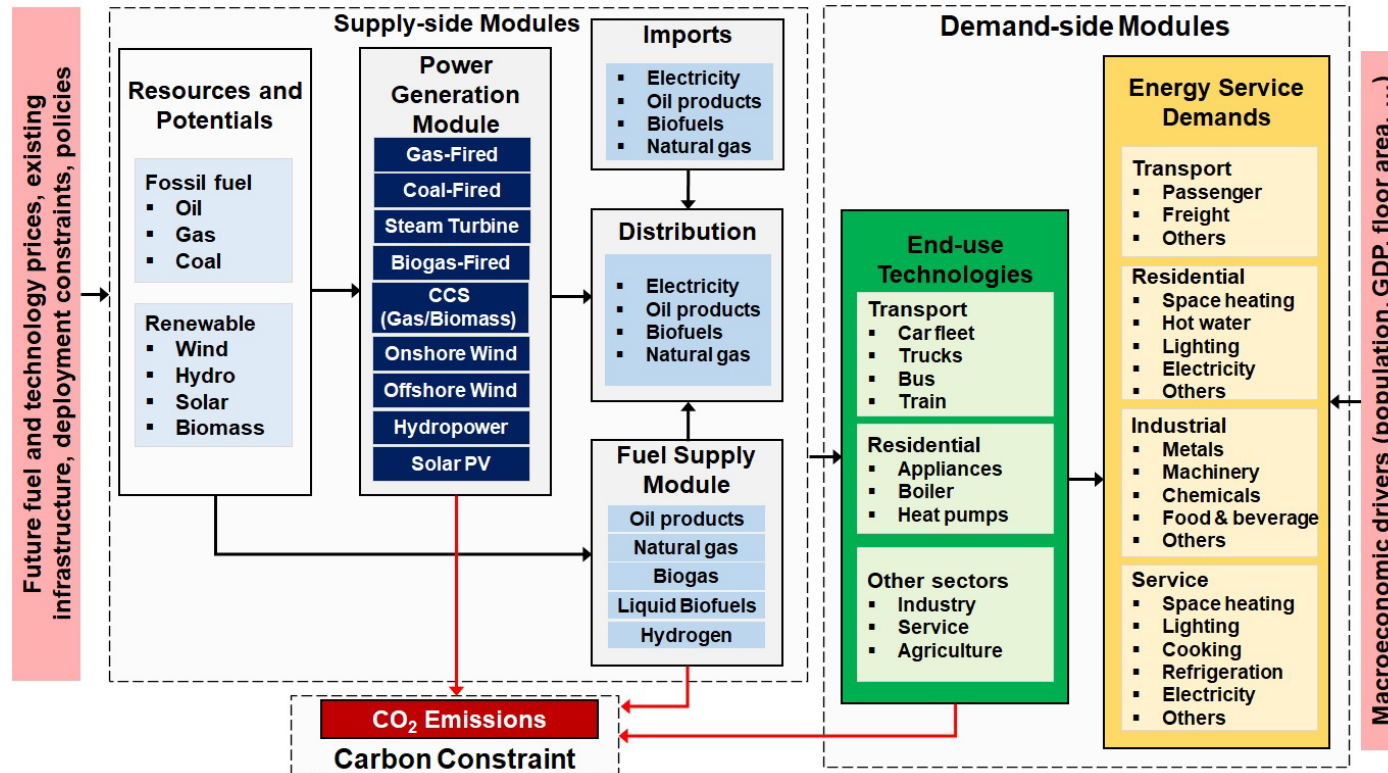
Some examples of applications can be found here:

<http://www.iea-etsap.org/index.php/applications>

<http://www.iea-etsap.org/index.php/workshops>

TIMES- Ireland Model (TIM)

Energy systems modelling to inform climate mitigation policy:
Feasibility & mapping of detailed decarbonised energy pathways



Given

- Climate policy constraints
- Energy demand dynamics
- Future technology evolution
- Geopolitical outlook – energy prices
- Feasible growth rates

TIM calculates

- Energy flows & investment needs
- Emissions trajectories
- Total system cost
- Energy imports & exports
- Marginal energy & CO₂ prices
- Unmitigated emissions: “Backstop” technology at €2k/tCO₂

Transparency & accessibility

- Model is freely available on GitHub: <https://github.com/MaREI-EPMG/TIMES-Ireland-model>
- Documentation paper is peer-reviewed and open source: <https://gmd.copernicus.org/preprints/gmd-2021-359/>
- Interactive results dashboard: <https://tim-carbon-budgets-2021.netlify.app/results>



TIM development process

- ❖ Model fully **open-source**
- ❖ “Best-practice” **development approach** – Git used for version control and integration, open web app for results analysis & diagnostics
- ❖ Developers with **international expertise** and links with global TIMES community, allowing knowledge-sharing
- ❖ Using **TIMES framework** – well-proven, high quality, continuously developed/maintained, open source code
- ❖ **Flexible integration** – Simultaneously maintaining “stable, policy-ready” model and development of research variants, allowing innovations in ESOMs, pushing state-of-the-art – leveraging across projects
- ❖ Strength of **systems approach** – automatic “sector coupling” by design – where is the best use of resources? What are sectoral trade-offs?
- ❖ Extensive **stakeholder review**
- ❖ Training PhDs, interns etc. & wider engagement integral for national **capacity-building**
- ❖ A focus on **alternate scenarios**, sensitivities, “what if” analyses
- ❖ **Dynamic integration** with national data sources and other national models (where possible)

Center on Global Energy Policy's Engagement with Decision Makers

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IMPACTS ON POLICY

Direct Access and Participatory Engagement with Government Committees & Councils

- Published the first net-zero energy system pathways for Ireland.
- Invited Expert to provide expert witness testimony to the Joint Oireachtas Committee on Climate Action.
- Iterate with government departments, Advisory councils and economic research institute – be generous and open with time and data
- Now Signed into law
<https://www.oireachtas.ie/en/bills/bill/2021/39/>



**This is the text of the Bill as approved by the Government on 23/3/21.
The final official text of the Bill will be published in the coming days by the Bills Office of the Houses of the Oireachtas.**



**CLIMATE ACTION AND LOW CARBON DEVELOPMENT (AMENDMENT) BILL
2021**

DRÉACHT

DRAFT



Senior research scholar **Jonathan Elkind** greets **Senator Lisa Murkowski** following a “Hearing on the Use of Energy as a Tool and a Weapon” in March 2021.



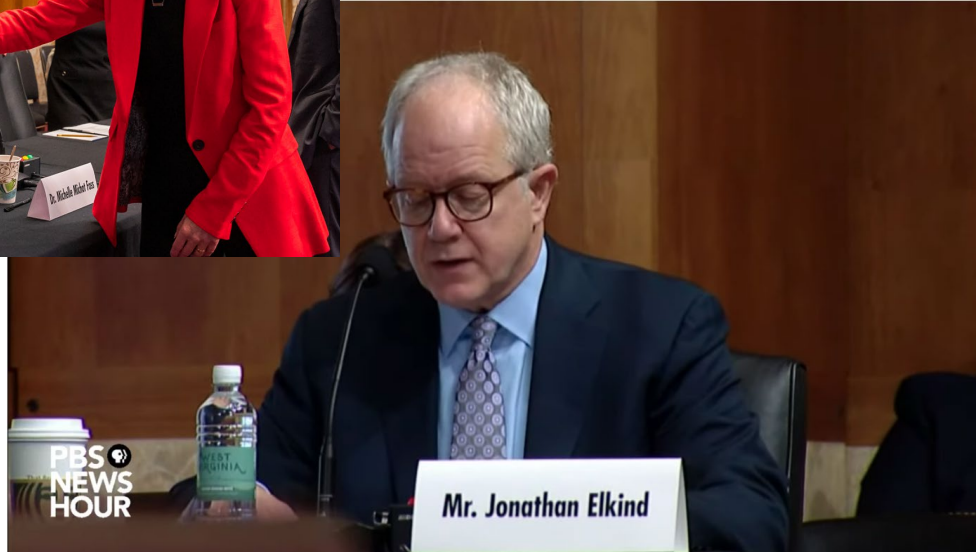
Senator Bill Cassidy meets with **Jason Bordoff** and other CGEP experts to present his latest climate and energy proposal and to get feedback from scholars.

Dr. Melissa Lott and **Jason Bordoff** brief Los Angeles Mayor **Eric Garcetti**, and incoming chair of C40 Cities on future policy priorities for climate action.



Columbia Climate School Deans **Jason Bordoff**, **Alex Halliday**, and **Ruth Defries** meet with former US President **Barack Obama** at COP26 for a roundtable discussion with President Obama (CC'83) and a group of young climate activists.





Senior research scholar **Jonathan Elkind** testifies at the Energy and Natural Resources hearing on “the Use of Energy as a Tool and a Weapon,” where he conveys the United States’ and its allies’ energy security position, and emphasizes the importance of delivering both near-term energy security and on-time climate solutions.



Jason Bordoff testifies before the Senate Committee on Energy and Natural Resources on the factors that have affected oil prices over the last several years.

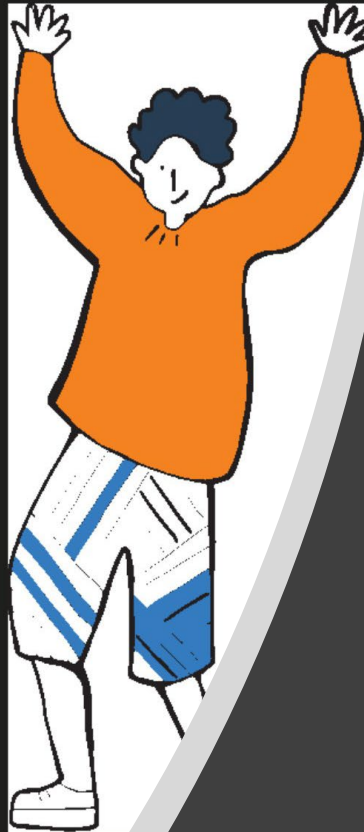
Connecting Decisionmakers

- Dialogue with several of world's largest energy and finance companies on strategies for energy transition
- Engagement with several leading financial institutions on how to adjust strategies in response to climate change
- Chairing coalition of companies, NGOs, academics advancing best practices and policy support to reduce methane leakage
- Building effort to curb flaring in Texas, drawing on CEO-level participation of companies, NGOs, academics, policymakers
- CGEP organized an executive workshop drawing together leaders from government, academia, energy and climate think-tanks and industry to discuss the role of State-owned enterprises in driving emissions and low-carbon alternatives



THANK YOU!





TOWARD A FUTURE-ORIENTED PROCESS OF DELIBERATIVE DIALOGUE TO ADDRESS CLIMATE CHANGE

DELIBERATIVE FUTURES

IMAGINING2050 WORKSHOP



SENSE MAKING



Unfamiliar issues



Meaning formation in the context of uncertainty and complexity

Anchors



How dominant anchors support/limit change?.

Horizon Scanning



Can we detect any emerging short and long-term trends?

Sense-making can be used to explore how people come to define complex and unfamiliar issues. It is a means to grasp group reasoning around a topic, formed in support of new, future-oriented and less familiar issues. In the past it has been employed to consider the use and acceptance of new technologies, such as food technologies or renewable energy technologies.

DIFFERENT USES:

- Exploring public perceptions, opinions and representations of unfamiliar issues;
- Finding prevailing anchors sustaining meaning, to examine their role as empowering or disempowering anchors for action;
- Anticipate emerging controversies or tensions from a local, social or ethical standpoint;
- Consider knowledge gaps as well as trust in, and depth of interaction with existing information sources;
- Scrutinize changes of meaning overtime and scan the horizon for short and long-term trends.

LEVEL OF DIFFICULTY



EASY

MATERIALS

- Paper
- Pens/Markers
- Sticky Notes

OPTIONAL EXTRAS

Transferable to the online environment, by using a live wordcloud application such as [Mentimeter](https://www.mentimeter.com/).

METHOD

1. On a table, prepare a range of photographs such as cut-outs from magazines and newspapers, postcards, or other pictures. These should cover a wide variety of cultures, landscapes and human emotions.
2. Ask the participants to choose a picture that depicts their priorities or concerns.
3. In groups, discuss the choice of picture and reasoning behind it.
4. Remaining in the same groups put the pictures aside and discuss the meaning of climate change. This can be framed around personal, community or wider impacts. During the discussion, notetakers should gather meanings on a large sheet, clustering similar meanings together.
5. Tying the two pieces together, discuss in the groups how the impacts suggested will affect the priorities and concerns previously outlined.
6. Discuss and deliberate what insights became apparent during the activity.



EMPATHY MAPPING



MAP CITIZENS



Who are your local citizens? Sun map your local people and decide who might be affected

EMPATHY MAP



Choose characters and get into their shoes. Empathy map one persona each.

REFLECT



How might their life be effected by climate change? Imagine the future with your citizens in mind

'An Empathy Map is a great human centred tool for moving us from our own world view. During this project it helped us see climate change from the perspective of others within our community. However, Empathy Mapping can be used for everything from product and service design to counselling and teaching'

DIFFERENT USES:

- Draw out unexpected insights about your audience or users
- Conflict or crisis resolution; by creating empathy towards others we can broaden our individual perspective, as well as shape and transform societies.
- Synthesise, categorise and make sense of existing or qualitative research (research notes, survey answers, user-interview transcripts)
- Discovering gaps in your current knowledge and identifying the types of research needed to address it. For example, a sparse empathy map can indicate a need for more research.
- Understand and empathize with others in your ecosystem, helping you improve your overall relationships and your results.

LEVEL OF DIFFICULTY



EASY

MATERIALS

- Paper
- Pens/Markers
- Sticky Notes

OPTIONAL EXTRAS

Coloured markers and or other creative materials to enhance the creative experience.

METHOD

1. Identify different 'citizens' (gender, age, job, location, disability, economic status etc)
2. Discuss who might be most affected by climate change.
3. Ask each group to draw an outline of a citizen. (Best at larger scale).
4. Ask each group to choose a citizen to map. Each creating a character including their hopes, fears, priorities, behaviours, influences, ability to influence, interests, climate concerns etc.
5. Ask each group to presents their citizens, inviting others to review and add.
6. Discuss and deliberate what insights became present during this activity.



STORY BOARDING



VISUAL NARRATIVE



Interactive visual depiction connecting written word to physical and social settings

PASSAGE OF TIME



Panels in storyboard offer opportunity to sequence action and show passage of time

COLLABORATIVE



Vision, setting, illustration, narration increases opportunity for diverse inputs and insights

Storyboarding has a long history, with professionals producing comics and films. In recent years its use has significantly widened to advertising, computer science, digital learning environments and the social sciences. It was originally developed as an early-stage low fidelity prototyping technique which was used to refine and develop ideas. Some common elements present in the use of storyboarding involve: a sequence of panels, a representation of the passage of time, inclusion of people and inclusion of text.

DIFFERENT USES:

- Breakdown a vision into smaller and more detailed elements;
- explore user system interactions;
- development of new technologies and practices;
- Situated development of future-oriented scenarios..

LEVEL OF DIFFICULTY



HARD

MATERIALS

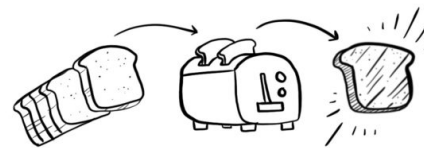
- Pre-printed storyboard template (larger A1 or A0 size is ideal to enable group collaboration).
- Paper of other sizes A4-A2 for notes and activities.
- Range of multicoloured pens, biros, pencils, sharpies.
- Post-its different colours including large colour post-its.

METHOD

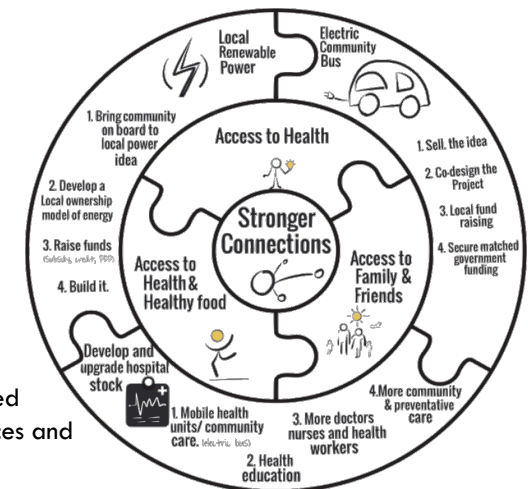
The methodology for storyboarding is flexible and can be adapted to fit specific needs and objectives. One of the main points to consider involves the development of a blank template. In developing a storyboard template, it is important to decide on the ideal number of panels needed and their sequencing. The most common template would be a blank horizontal comic-strip type template. A simple variation of this template could include a sequence of three panels looking at past-present-future.

The Imagining2050 template has three layers, the inner circle considers 'why we care' for 2050 in light of climate change, the middle circle draws out some 'focus areas' or priorities linked to the core concern and the outer layer identifies action strategies and visual depictions of the changes the group aspires to formulation of scenario of 'how it will look like'.

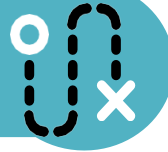
Draw toast



This fun activity was created by Tom Wujec for his Wicked Problem Solving™ toolkit. Check it out for further resources and to peep his ever-popular TED Talk



COMMUNITY MAPPING



GLOBAL PROBLEM/LOCAL SOLUTIONS



To address climate change adequately we need to 'localise' action

PLANNING



Collaborative siting of new technologies, asset protection and ID issues

SENSE-OF-PLACE



Local history, social bonds, connections offer rich and deep connections to support action.

Community mapping is a relatively quick and accessible approach to inform spatially explicit climate change management at the local scale. Community maps provide a visual representation of what a community perceives as "its place" and the significant features within it. For the purposes of planning for climate action, participatory community mapping provides a means for communities to share their knowledge about the past, present and future impacts of climate change

DIFFERENT USES:

- Engaging communities in planning for climate action;
- Raising awareness about ongoing and potential future climate change issues;
- Developing a common understanding of climate change risks;
- Providing a platform to explore and deliberate on potential solutions; and
- Empowering local communities.

LEVEL OF DIFFICULTY



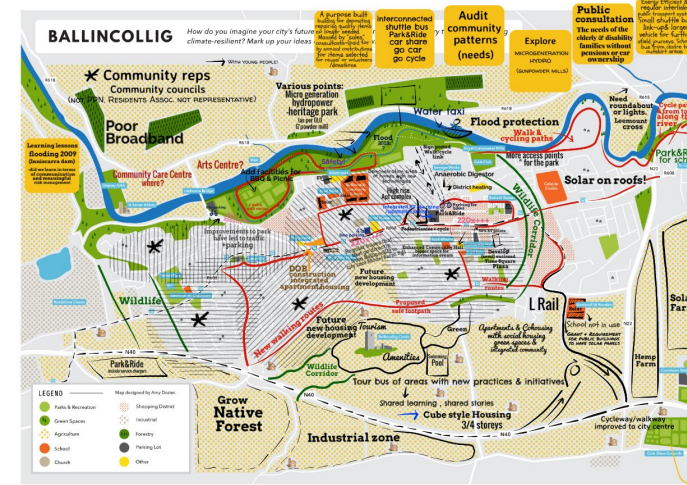
MEDIUM

MATERIALS

- pre-printed local map template,
- markers, pens,
- high level maps of the area with key points of interest identified/highlighted,
- sticky notes

METHOD

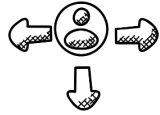
1. Identify recent weather events and/or periods of climate variability that have impacted upon the local area and outline impacts;
2. Highlight existing preventative or defence measures and green assets;
3. Consider projected information on how the climate of the area is expected to change in the future and other social, economic and environmental plans/trends.
4. On the basis of the weather events identified in Step 1, outline additional areas that might be exposed as a result of projected changes in climate on the map.
5. Site areas of concern, proposed changes;
6. Consider energy use.



AUDIENCE POLLS

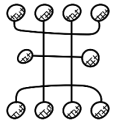


INDIVIDUAL DECISIONS



Consider your energy choices now and into the future

TRENDS



Compare choices with that of others and establish any strong patterns

REFLECT



How my decisions affect the future?
Existing trends?

Audience polls can be a powerful tool to open up discussion around future energy choices. Although everyone uses energy (electricity, heat, transport), energy transitions are often framed as macro events over long time-scales in which large-scale technology switching issues dominate. In this framing, the link between the energy transition, people's daily lives and decision-making is obfuscated or simply framed as a technology diffusion problem, which typically closes down discussion to a limited number of topics such as barriers and costs.

DIFFERENT USES:

- Interactively explore about the implications of individual decisions on collective or common good goals
- Compare individual/group decisions in the context of specific preferences which might or might not align with their own personal preference.
- Develop scenarios based on specific group trends
- Establish levels of consensus around specific issues

LEVEL OF DIFFICULTY



MEDIUM

MATERIALS

- Audience engagement app,
- audience smart phones
- overhead projector.

OPTIONAL EXTRAS

Transferable to the online environment, by using a live Polling service such as Slido <https://www.sli.do/videos>

METHOD

Exercise based on questions and live feedback and reflection. The following questions worked well but group-appropriate variations are encouraged:

Q 1. How do you commute now?

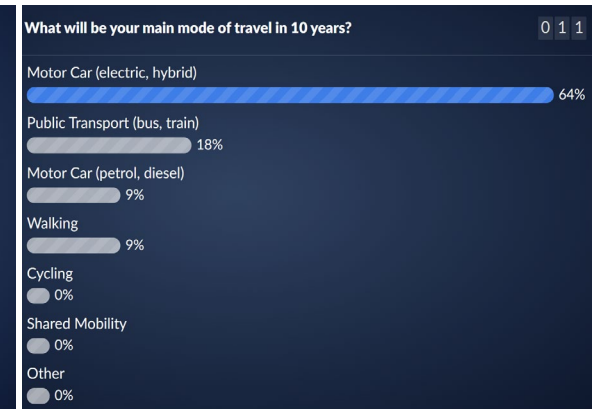
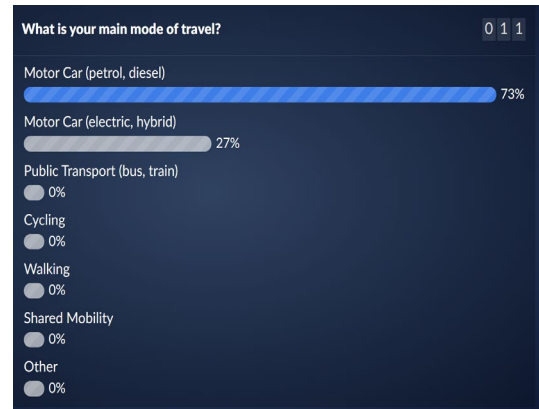
Car (petrol or diesel); Car (hybrid or electric); Cycling; Public Transport; Walking; Other

Q 2. How will you commute in 10 years?

Car (petrol or diesel); Car (hybrid or electric); Cycling; Public Transport; Walking; Other

Q 3. What determined your choice?

Cost, Convenience (e.g. time), Environment impact, Personal well-being (e.g. health, social), Logistical needs, Habit, Advice or recommendations (e.g. from government, colleagues, family, friends)



BALLOT



DRAFT



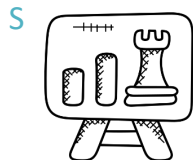
Consider relevant/emergent issues to be posed on the ballot

CONSENSUS



Establish agreement around content/structure of ballot and consensus rates

RECOMMENDATIONS



Present preliminary findings, discuss recommendations for policy and decision-making

Citizen engagement processes can use a variety of methods to decide their final recommendations, report, actions plan and so forth. Future workshops may culminate in the development of an action plan employing consensus methods while others have been used to collect ideas and/or visions alone. In some cases, questionnaires have been circulated to participants to anonymously gather their opinions on the vision statements that have stemmed from the workshops.

DIFFERENT USES:

- Develop recommendations;
- Establish levels of consensus around core themes;
- Collect further ideas on visions of change;
- Use ballot anonymity to facilitate inclusion and voice.

LEVEL OF DIFFICULTY



HARD

MATERIALS

- Copies of Draft Ballot Papers
- Pens.
- Ballot Box.
- Ballot Papers.

OPTIONAL EXTRAS

Transferable to the online environment, by using a live Polling service such as Slido
<https://www.sli.do/videos>

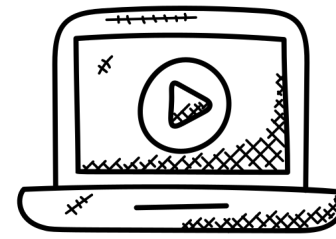
METHOD

Steps used by Imagining 2050 on 2-weekend long events:

1. Draft papers were prepared by the team (based on emergent themes) in advance of final meeting;
2. On the Saturday evening of weekend 2, the research team convened once again to amend the draft paper;
3. On the Sunday morning of weekend 2, the group were presented with the draft and asked to review/amend;
4. Once content agreed, members were asked to complete it privately and to place it in ballot box;
5. Completed ballot papers were collected, counted in full view of the group and preliminary results returned to the group.

Question 9: Please consider the following suggestions and rank in order of your preference a climate initiative you believe would be most impactful for Ballincollig in the next 10 year period	
	Rank in order of your preference (1, 2, 3...)
Zoning land for energy and community projects	
Power purchase contract for Ballincollig (Micro-generation, feed in tariff)	
Food growing initiatives (community gardens and allotments, community supported agriculture garden)	
Improved bus transport system	
Fleets of small bus carriers	
Segregated cycling routes	
Carbon Neutral agriculture	
Community-led housing projects	
Park and Ride (East and West of Ballincollig, with shared mobility facilities and EV points)	
Pedestrianised town centre	
Set-up of local energy co-op	

DELIBERATIVE ENGAGEMENTS ONLINE



SETTING THE STAGE

- Instructions;
- Selection of focused and quiet place;
- Experienced Facilitator;
- Time for reflection and discussion;
- Trust and rapport;
- Build-in breaks.

INFORMATION GIVING

- Media rich content;
- Interactive elements
- Welcoming messages & ice breakers;
- 'Rules of engagement' / 'netiquette'
- Attention building through visually rich/interactive materials;
- Mix of synchronous and asynchronous communication;

DELIBERATIVE ACTIVITIES

- Mix of formal and informal interactions;
- Mix of voice exchange, chats and messages;
- Roadmap with clear objectives and tasks to help assess progress;
- Instruction, guidance and feedback through multiple means;
- Moderator/facilitation strategy (either hands on/off)- (*i.e.enforcement of netiquette, stimulation of discussion, conflict resolution, filter of chat comments, other problem solving*);
- A shorter and more spread-out programme.

DELIBERATIVE INTERFACE

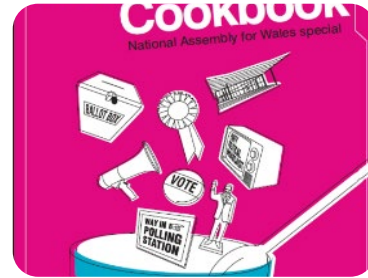
- Overview of interactive functions, audio and video, basic problem solving and contact details for technical support;
- Interface accessibility and user friendly tools.
- Safety protocols and data management practices;
- Display cues that allow self-directed time management and regular progress cues;
- Break-out rooms, quiet rooms and private chats;
- Dedicated live Interface management
- Personalization of online environment (*font size, background colours etc.*)



Online environments demand extra attention and resources in the development of usable, clear, interactive content

Further readings and references

Deliberative tools



[Democracy Cookbook](#)



[Enhancing Citizen Engagement On The Climate Crisis: The Role Of Deliberation](#)



[Involve](#)



[Participedia](#)



[UNESCO: Futures Literacy Labs](#)

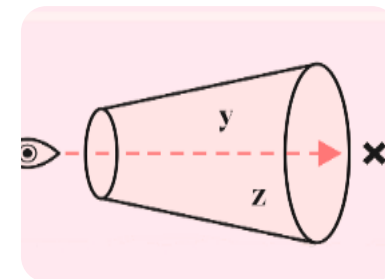


[The Long Time Tools](#)

Future-Thinking Tools



[UK The Government Office for Science \(GO-Science\) The Futures Toolkit](#)



[Nordkapp: Actionable Futures Toolkit](#)