Ten key principles:
How to communicate climate change for effective public engagement

Climate Outreach Working Paper

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Abstract:

This report summarises up-to-date social science evidence on climate communication for effective public engagement. It presents ten key principles that may inform communication activities. At the heart of them is the following insight: People do not form their attitudes or take action as a result primarily of weighing up expert information and making rational cost–benefit calculations. Instead, climate communication has to connect with people at the level of values and emotions.

Two aspects seem to be of special importance: First, climate communication needs to focus more on effectively speaking to people who have up to now not been properly addressed by climate communications, but who are vitally important to build broad public engagement. Second, climate communication has to support a shift from concern to agency, where high levels of climate risk perception turn into pro-climate individual and collective action.

For an overview, the ten key principles are (see also infographic on the next page):

How to open the door:

1. Connect with people's values

2. Support trusted messengers

3. Test, research, and don't trust your own instincts

How to reach people's hearts and minds:

4. Bring climate home – highlighting visions & solutions

5. Use frames and narratives in a considered way

6. Tell powerful stories and use effective imagery

7. Provide accurate information and be careful communicating uncertainty

How to turn concern into action:

8. Provide spaces for interaction

9. Make climate action an issue of social belonging

10. Offer possibilities for meaningful personal action

Ten evidence based principles for effective climate communication

How to open the door

1. Connect with people's values

What are people's concerns linked to climate? Find it out and base your communication on it.

2. Trusted messengers

Communicate authentically – and consider nurturing fresh voices from across all segments of society.

3. Test & research

Do not trust your own instincts – better research the characteristics of your target group, and test the effectiveness of your message.

How to reach minds and hearts

4. Bring climate home

Show relevant local (regional/national) examples of conseqences and climate action – with a focus on solutions.

6. Use imagery to tell powerful stories

Show the humans behind climate – with realworld stories and authentic imagery.

5. Use frames consciously

Use words and narratives that resonate with your target group.

7. Provide accurate information

Use clear, non-technical language and lead with what we know for certain.

How to turn concern into action

8. Provide spaces for interaction

Make climate a topic in everyday conversations and consider organising public dialogue formats.

9. Make climate action the ‚new normal'

Show people ‚like you and me' that have begun to take climate action.

10. Offer possibilities for personal action

Encourage people to reduce carbon foot prints and to engage in social organising.

Contents

Intro

Why this guide

Global heating is a dangerous threat to human well-being and the environment. In order to "secure a liveable and sustainable future for all" [1] we need substantial and rapid social change. This transition is the challenge of our time, and it includes transforming our ways of life, transforming the ways businesses operate, and transforming political frameworks so that they put individual action into a context of collective action. Public engagement, meaning people's consent and active contributions, is one very important component of this transition. Effective climate communication can contribute towards generating public engagement, and thereby lead to the strong social mandate needed to build lasting dynamics for climate action. [2]

This text provides a comprehensive overview of the scientific evidence base on climate communication for effective public engagement, and it wants to inform practitioners in the field. In order to prepare the ground, the text starts with a short explanation of why public engagement is crucial for transformational change, and continues with some brief insights on how people make sense of climate psychologically.

The core part of the text then summarises research findings and structures them into ten key principles of climate communication for effective public engagement. The ten key principles are further sorted into three clusters: First, what has proved successful to open the door, second, what does it need to reach minds *and* hearts, and third, what has been found to help turn concern into action. There is some logical order in this categorization (the first cluster of principles probably being a basis for the other categories, and so on). However, the three clusters and the principles within them are interlinked, and are probably *all* needed to effectively engage people.

For each principle, we present a text based on concrete scientific evidence. To bridge the gap between science and practice we interpret the scientific evidence and add a brief 'do-and-don't' at the top of each principle, and a table presenting our ideas on how each principle could be put into practice.

We are grateful to all people involved in the review of this text, and we appreciate the profound work done by numerous scientists and practitioners on climate communication – they have built the evidence base we draw from. We invite readers to decide what of the information provided is transferable to their specific communication scenario – be it having conversations with peers, giving a talk, preparing a communication campaign or setting up public engagement infrastructures from a policy perspective.

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[1] IPCC WGII 2022
[2] Clarke et al. 2020

Why public engagement is important

Responding to climate change requires accelerated action across the world, at all levels of society. There is no simple, off-the-shelf blueprint for how this will be achieved. Major social shifts – for example changes in attitudes or social norms, or people adopting new behaviours – are unpredictable events, emerging in different ways at different places and times. It is, however, clear that achieving rapid social change, with the consent and collective contribution of people, requires effective communications in order to ensure engagement of the public, or it will not succeed.[3]

At the time of writing, public concern about climate change is high across Europe.[4] However, rapid emissions cuts require significant lifestyle changes, a restructuring of economies, and supportive regulatory frameworks that put individual action into a context of collective action. In the face of these challenges, it is not at all clear, that high levels of concern will turn into personal action, and into committed collective support for changes to be implemented by governments and business. Public engagement [5] can fuel a dynamic where a perceived strong mandate leads politicians to adopt transformative climate policies, where people are supported and motivated to adopt low carbon lifestyle changes, and where business are incentivised and compelled to build a green economy. Despite often taking a backseat behind technological advances and the introductions of regulations, policies and laws, the *communication for effective public engagement* is therefore a crucial piece of the climate action puzzle. [6]

We think, despite its catastrophic consequences for many people all over the world, the COVID-19 pandemic provides an example of effective public engagement. It showed that governments can successfully engage the public if they choose to do so and invest in it. Politicians were in close contact with scientists, who supported them to take informed decisions, and scientists reached out to inform the public in understandable ways. There was a common understanding for the need to 'bring the curve down',[7] and despite social distancing a feeling of togetherness and collective purpose evolved. People all over society did their part and took consequent action in order to prevent adverse consequences happening to themselves and others in the future.[8] So the COVID-19 example is encouraging for public engagement, as it indicates that substantial public engagement *is* possible.

Reflecting on what are the core challenges for climate communication at the moment, we suggest that two aspects deserve special attention: First, how to effectively speak to 'new audiences', that is people that have not been addressed properly by climate communicators so far; [9] and second, how to turn concern into action.[10]

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[3] Clarke et al. 2020
[4] European Social Survey 2018; With rising temperatures climate scepticism has also decreased elsewhere (e.g. Australia, see Hornsey et al. 2022).
[5] For a definition of 'public engagement' see the glossary at the end of this guide.
[6] Clarke et al. 2020
[7] This refers to the curves for new COVID infections and hospitalisations; for climate this would be the curves of temperature and greenhouse gas concentration in the atmosphere.
[8] See eg. IPCC WGIII (2022). The analogy may have its limits, though – for example public support for air travel restrictions was motivated in parts by people expecting measures to be shorter-lasting (Kallbekken & Sælen 2021).
[9] This applies but is not limited to people with more conservative values, who, as a group have been more likely to be sceptical of climate change and resistant to climate policy (Whitmarsh & Corner 2017).
[10] E.g. Moser 2016

How people come to care about climate[11]

When we care for something, this can be a very powerful motivation to take action around this issue. The infographic below shows that caring is about cognition *and* emotion and behaviour.

Bye-bye 'information deficit-model'!
Facts and figures are important – but they do not shift views. It is wrong to assume that the public is not acting more on climate out of an information deficit. An approach to climate communication that primarily wants to better inform people has therefore failed.

Stories can shift believes
Stories are as old as human civilization, and we need them to make sense of any given issue. Personal stories show the human faces behind an issue and speak to the more emotional part of our brains, that is not easily reached by graphs or statistics.

From concern to taking personal action
Understanding is not enough because it does not automatically mean people take personal action. Quite some support may be needed to bridge the so-called 'attitude-behaviour-gap'.

The need for salience
Ten thousands of years of evolution have provided us with brains that are best wired to deal with immediate threats and prefer to ignore threats that appear distant in space and time.

People make sense of climate change by stories that 'feel right' – narratives that resonate with their values and identity, presented by people they trust, and made acceptable by the social norms around them.

Feeling anxiety is not unusual
Experiencing despair in the face of the climate crisis is possibly a companion of deeply caring – and taking action can help.

'Narratives' and 'framing' – the way we put things
We use certain words when we talk climate and connect it to specific causes and effects. Some ways to put climate may resonate with us – others may not.

'Social norms' as we are social beings
There are few influences more powerful than our friends, and social networks – and the habits, beliefs, customs and behaviours of people surrounding us.

Our identities, worldviews and values ...
... are guiding principles on the way we think, feel and act on a whole range of different topics in our lives – including climate change. As our lifestyles and the jobs of many are deeply intertwined with the causes of climate change, we may be reluctant to accept climate change is a reality and we need to change.

Whom do you trust?
Trusting somebody is like glue in relationships and a foundation that allows us to benefit from others' expertise. However, we are also careful in whom we trust, as trusting somebody makes us vulnerable to being let down.

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[11] The infographic draws from the following sources: Seethaler et al. 2019; Leiserowitz 2006 (for 'information deficit-model'); Gustafson et al. 2020 (for 'stories'); Gifford 2011, Lorenzoni & Pidgeon 2006 (for 'salience'); Badullovich et al. 2020, Nabi et al. 2018 (for 'framing'); Corner et al. 2014, Leiserowitz 2006 (for 'values'); Goodwin & Dahlstrom 2014 (for 'trust'); Hawkins et al. 2019, Sparkman et al. 2021 (for 'social norms'); Gunasiri et al. 2022, Baudon & Jachens 2021 (for 'eco-anxiety'); Kollmuss & Agyeman 2002, Bouman et al. 2021 (for 'action'); Brick et al. 2021 (in general)

How to open the door

1. Connect with people's values

- **Do** base climate communication on values of your conversational partners and connect to what are their concerns linked to climate.
- **Don't** expect that people change their attitude or behaviours as a result of more or better expert information.

Values are guiding principles in people's lives, and although people may not always act in line with their attitudes,[12] someone's values can help us understand how they think, feel, and act on a whole range of different topics (including energy and climate change).[13] Perhaps the most important aspect of any message, campaign or narrative on climate change is therefore the extent to which it connects with, and builds on the target group's values.[14]

The values of a target group may well differ from the communicator's own values. Historically, many climate communicators have had an environmental background, and they may intuitively have communicated climate in a way that resonates with other environmentalists but repels others.[15] In order to build broad public support, however, it seems especially important for climate communication to reach groups from all over society [16] by connecting climate in an authentic and honest way to their values.[17] A connection *can* be drawn to climate from all kinds of different values of specific target groups, as climate change is a threat to every element and all aspects of our lives.

Research by Climate Outreach and others provides insights into the climate related values and attitudes of different parts of a population. This research can categorise the population of a society into 'segments' according to different values held by people.[18] For example the British population can be segmented into the following seven segments: 'Progressive Activists', 'Backbone Conservatives', 'Civic Pragmatists', 'Established Liberals', 'Disengaged Battlers', 'Disengaged Traditionalists', and 'Loyal Nationals'.[19] In a next step, each segment's attitudes towards climate are studied and reported.[20] The results are probably most useful for finding the common ground between groups with different values. Knowing how to put climate in a way that does not offend anybody can inform the creation of a shared direction and purpose on climate. Segmentation research also shows the differences between people, allowing for the creation of more target-specific communication. It can also highlight 'red flags' – issues that may meet resistance in certain target groups.

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[12] There is often some disconnection between attitudes and behaviours. See e.g. Kollmuss & Agyeman (2002) and for a more climate specific example e.g. Hall et al. (2018).

[13] Corner et al. 2014; Corner et al. 2016; Hornsey et al. 2016

[14] Susanne Moser, a researcher in the US, has worked on climate communication since the 1990s, with a special interest in bridging the gap between science and practice. In her 2016 review of climate communication research and practice she finds that values and worldviews have become a focus area for climate communication research. (Moser 2016)

[15] Whitmarsh & Corner 2017

[16] One especially important group maybe segments of the populations holding more conservative values.

[17] Some reflections on the ethics of tailoring climate risk messages are given by Persson et al. 2015

[18] Segmentation is most solidly based upon fundamental aspects of people's identity (such as their values), see Corner & Randall (2011)

[19] Wang et al. 2020

[20] E.g.: For Great Britain: Britain Talks Climate / Climate Outreach (Wang et al. 2020, 2021) → https://climateoutreach.org/britain-talks-climate/ ; for Germany Melloh et al. 2022 → https://climateoutreach.org/uebers-klima-reden ; for Australia e.g. Morrison et al. 2018; for the US 'Global Warming Six Americas': Leiserowitz et al. 2022

There seem to be some shared or universal values that communication can connect climate with, in order to reach diverse audiences: [21] health; balance between humans and nature; preserve the countryside (for the UK); fairness; [22] protecting the people and communities we love; autonomy, energy security and safety; environmental protection; passing over a good world to our children.

The question arises, whether climate communication should exclusively focus on the common ground, or if there is also a case for driving conflicts. Alternatives to the status quo have also been articulated via acts of resistance, thus challenging the moral legitimacy of existing practices, and such more radical climate activities have been able to shift public perceptions: [23] For example, populist discourse in Canada has been able to prevent the construction of an oil pipeline,[24] and illegal protests in Hambach forest in Germany have had a positive influence on national coal phase-out negotiations.[25] When youth all over the world gathered for peaceful climate strikes, this was an act of civil disobedience, and it has been able to at least problematise climate inaction since 2018.[26] That said in support of protest and polarisation, one should keep in mind that rapid and effective climate action finally needs stakeholders and commitment from all over society, and a polarised society may be a rather difficult terrain for such collaboration.[27]

Principle 1: Connect with people's values Some thoughts on how to put this into practice	
1. Personal conversations 2. Giving a talk	– Ask people what they care about and love, that is affected by climate change – and truly listen to what they say. – Share one thing you care about and are passionate about – something that many people in the audience can identify with – and the risk climate change poses to that. – Advanced: Research a few climate projections around broad themes, for example: food, landscape, leisure activities, health, biodiversity, economy. You can then draw from this repertoire and use them in conversations with your audience about how climate change affects the things they love.
3. Climate campaigning 4. Policy-making	– Consult existing research to understand what is important to people when it comes to climate, also taking into account provincial & ideological differences and controversies around specific policies or infrastructure. – Advocate for climate policies and design climate policies that are best possibly incorporating people's concerns and needs (such as 'fairness'). – Communicate in a way that resonates with people's values around climate policies, and in climate campaigns more broadly.

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[21] IPCC WGIII 2022, p5-6; Wang et al. 2020, 2021
[22] Though there may not be a common understanding of what 'fair' actually means (Climate Outreach 2022).
[23] Cavalho et al. 2017
[24] Neubauer & Gunster 2019
[25] Mohr & Smits 2022
[26] Han & Ahn 2020
[27] Even with companies and industries that contribute largely to current carbon emissions by either their production processes or the products they put into society, communication could try to build common ground. These companies, and all the people working for them, have actually supported our current lifestyles and most of them have not on purpose done harm to the climate. Climate communication could express respect and gratitude for their contribution to our wellbeing, and then expand on the new and urgent necessity to restructure our energy supply, operating modes and lifestyles based on what we know about the climate crisis and its causes – a suggestion inspired by Hayhoe (2021) and Evans (2017).

2. Support trusted messengers

- **Do** take an effort and try to truly understand the worldviews and concerns of your target group as this helps them to trust you as a messenger.
- **Don't** assume that you are the only potential climate communicator for your target group. Try to provide a setting where new and fresh voices come forward from across all segments of society.

Trust is a precious commodity in communication. The effect of most messages on people will depend on the basis of their trust in the communicator.[28] People will usually connect more easily with the message of a messenger whom they perceive as credible and who speaks to their world views, or who even belongs to their community.[29] Trust in climate communication can be nurtured by identifying and supporting new climate communicators that are already trusted persons for a specific target group, and by enhancing trustworthiness and credibility of existing climate communicators.

Quite some messengers on climate are from the environmental community, and many people may distrust environmentalists. In order to better reach groups outside this 'bubble', there is a need for new voices belonging to those groups. For example, a study in the US showed that the impact of the same climate messages increased, when it was attributed to leaders from military or the Republican party (which has been known to be somewhat sceptical towards climate).[30] Climate communication activities may contribute here by supporting new and fresh voices from across society.

Concerning specific 'types' of communicators, global surveys on trust provide some interesting insights: Trust monitoring consistently finds a low level of public trust in politicians and the media.[31] However, despite a widespread distrust in societal leaders, they are nonetheless highly influential and should not be disregarded. Public opinion on climate has been found to be influenced by 'elite cues' – that is, signals and messages people get from the media, politicians and other high-profile voices.[32] Therefore, climate communication is also about empowering political communicators and the media for effective communication that reaches out to people's values and emotions.

When it comes to climate scientists, the public globally has a high opinion of them,[33] and a communication guide for IPCC authors recommends them to communicate authentically, and be confident communicators.[34] Trust in scientists (and in experts more broadly) can be nurtured, if people perceive their competence and good intentions.[35] Authenticity has a similar effect, that is experiencing the expert as a person, with unique and individual qualities, beyond a role as researcher or member of a certain institution.[36] This connects to another aspect that enhances experts' trustworthiness, especially when confronted with more sceptical audiences: making themselves vulnerable to their audience, e.g. by creating a situation where they have

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[28] This so-called 'messenger effect' has been widely found. Large-scale purchase decisions (e.g. for heating pumps) may be an exemption, with no messenger-effect – though effective framing proved important in this context, too. (Hafner et al. 2019)
[29] Fielding et al. 2020
[30] Bolsen et al. 2019
[31] Edelman 2021
[32] Brulle et al. 2012
[33] Edelman 2021; though trust in climate science (and science in general) may be lower in polarised settings such as among conservatives in the US (Hamilton et al. 2015).
[34] Corner et al. 2018
[35] National Academies of Sciences, Engineering, and Medicine 2017; Hendriks et al. 2015
[36] Saffran et al. 2020; Dudman & de Wit 2021

something to lose, be it wasted time, facing personal attacks, or embarrassment.[37] While scientists may be reluctant to communicate in order to *engage* people, as they think this may hurt their credibility, there seems to be some room for them to engage publicly without damaging their reputation.[38]

Beyond elite communicators, friends and family may also be trusted sources of information on climate – with especially high levels of trust found e.g. in Germany.[39] Supporting lay people to integrate climate effectively into their everyday conversations can tap into this potential.[40]

What else can enhance trust and credibility? Consistency between the message and the messenger has been found to play an important role. To start with, support for climate policies has been found to increase, when advocates for those policies are leading the way and reducing their own carbon footprints.[41] The same positive effect has been found for communication that tried to promote lifestyle changes: Messengers were more successful when people saw that messengers themselves had already adopted such lifestyle changes – as long as these changes didn't seem too extreme; and this effect was even stronger when advocates were perceived to have a high level of expertise on climate.[42]

Principle 2: Support trusted messengers Some thoughts on how to put this into practice	
1. Personal conversations **2. Giving a talk**	– Share your own path to awareness on climate issues, including what you personally chose to do, and also the struggles and doubts you experience. – Explore what you have in common with your audience and how you can genuinely connect to this. – Engage in a continuous communication process, going beyond a one-time conversation or talk. – Keep calm and stay confident ☺ Your authenticity greatly adds to your trustworthiness.
3. Climate campaigning **4. Policy-making**	– Reflect who are trusted (and possibly influential) persons in different target groups across society, especially real voices from communities that may not have been deeply involved with the climate issue up to now. – Create settings where they want to step in: Build dedicated programmes around recruiting, training and supporting communicators. – For politicians and campaigners: Engage in relevant and visible low carbon lifestyle changes, as this will underline your credibility.

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[37] Goodwin & Dahlstrom 2013
[38] Kotcher et al. 2017; and some scholars argue there is a need for scientists to act rather radically on their own warnings, e.g. by engaging in acts of civil disobedience (Gardner & Wordley 2019).
[39] Melloh et al. (2022) for Germany talks Climate.
[40] For example, Webster & Marshall (2019) provide a toolkit on how to do so.
[41] Attari et al. 2019
[42] Sparkman & Attari 2020; with a focus on researchers communicating on climate: Attari et al. 2016.

3. Test, research, and don't trust your own instincts

- **Do** test what works and doesn't work.
- **Don't** assume that the way you intuitively create your climate communication will resonate with your target group.

Climate communication researchers have acknowledged they need to engage more with practitioners, and in that course need to make use of their own findings to do this effectively.[43] Vice versa, practitioners in climate communications can benefit by adopting a reflective attitude, and taking into account scientific evidence. Because every person is deeply involved in their issues, they cannot depend on their own intuition to tell them what would work for other people. Therefore, climate communicators need to step back, and make a deliberate effort to really understand a target group. Complementing this, it seems highly advisable to test any communications before putting them out at large scale.[44]

The following provides some more practical ideas and possibilities how to learn more about a target group. It starts with easy, and 'no-cost' options, and increases in terms of time and budget needed, and covers both qualitative and quantitative research methods.[45]

Principle 3: Test, research, and don't trust your own instincts Some thoughts on how to put this into practice	
1. Personal conversations 2. Giving a talk	– Reflect on your communication ('evaluate' success) and improve. – Have conversations with people, and aim at listening and understanding. Use questions ("Tell me what you think about…"). This is not about showing your opinion and arguing. – Ask an 'aunty': That can be a friend or a member of family – preferably somebody outside your own 'bubble' or echo-chamber. – Chat with people from your target audience: This includes informal chats you can start in everyday life, e.g. with a bus or taxi driver. – Before a talk: Inform yourself about the audience, e.g. by asking the organisers. After the talk: Get informal feedback. – Consider this as a learning journey – relax and enjoy.
3. Climate campaigning 4. Policy-making	– Interview people: Prepare questions beforehand – what exactly do you want to know from people? – Hold workshops or informal group discussions.[46] You can test messages, ideas or concepts. You can also use these settings to co-create climate communication designs. – Establish and consult an advisory group that represents your target group. – Go where people are already, be it community events or people's work places. This way you do not face costs for convening. – Surveys: Assessing the opinions of bigger numbers of people on questions that are relevant to you. Often surveys are based on insights you draw from focus groups. You can do surveys yourself (surveymonkey is a possible tool), or contract a professional survey company.

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[43] Moser 2016; and this summary of 'Key Principles' is one attempt to bridge the gap between science and practice.
[44] Whitmarsh et al. (2013) state a critical need for evaluation of examples of engagement – with possibly also identifying successful examples to inform others.
[45] For a definition of 'qualitative research' and 'quantitative research' see glossary at the end of this text.
[46] So-called 'focus groups' – for more information on this methodology see e.g. Shaw & Corner (2017), who use such 'narrative workshops' to test narratives.

How to reach people's hearts and minds

4. Bring climate home – highlighting visions & solutions

- **Do** show meaningful local climate action and relevant local impacts of the climate crisis, using tangible real life examples.
- **Don't** give in to the temptation of telling an apocalypse story – it will not leave your audience motivated to take action.

Although climate impacts have grown in salience during the last years, climate is still sometimes presented and perceived as an issue far away. The invisibility of greenhouse gases makes it easy to imagine the threat as distant – 'out of sight out of mind' as the saying goes.[47] Therefore, it remains crucial for climate communication to bring the climate issue home and make it something personal, close, and urgent.[48]

Climate can be connected to people and their everyday lives by showing examples of 'people like you and me' taking climate action. The same applies for showing adverse local effects.[49] This should focus on places and things that are at risk (including humans, flora, fauna, and symbolic meanings) and truly mean something to the audience.[50] Longer time frames can be related to meaningful phases in a personal life span ('…by the time your children become parents…'),[51] and David Holmes, director of the Monash Climate Change Communication Research Hub in Australia, refrains from using time frames that go beyond 50 years, as in his experience people then lose interest.[52]

With more sceptical audiences, the need to adapt to certain changes in climatic conditions and preparedness for extreme weather events may be good entry points for communication on wider climate action that then also addresses the root causes of climate change, namely reducing greenhouse gas emissions.[53]

Research in psychology has shown that risk perception plays an important role: It *can* motivate people.[54] There has been a discussion, however, about the effectiveness of evoking fear, and while this is attracting people's attention to climate, it may not easily motivate personal engagement.[55] It seems that people are not likely to engage with climate and take action, when they are overwhelmed because the issue feels too threatening – and frequent alarmistic messages may even numb people. [56] Positive emotions like hope in contrast have been found to favour climate actions,[57] for example, a study of motivations in young climate activists suggests fear can motivate people if mediated with hope.[58] Showing examples of climate actions can inspire such hope.[59] The role of climate communication to inspire people may be especially important as more and more findings indicate there is a growing sense of

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[47] See e.g. Gifford 2011
[48] Lorenzoni & Pidgeon 2006
[49] Loy & Spence, 2020; Howe et al. (2019) reviewing the effects of local extreme weather events specifically; Scannell & Gifford (2013) on the effectiveness of showing local impacts.
[50] Brügger et al. 2015
[51] Hesebeck 2018
[52] Holmes, talk at Oxford Climate Outreach office on 9 June 2022
[53] Howell et al. 2016
[54] Smith & Mayer (2018) studied how risk perception correlates with ameliorative behaviour and policy support and find risk perception generally does have a positive effect. For a more detailed study e.g. Maartensson & Loi (2022).
[55] O'Neill & Nicholson-Cole 2011
[56] Gifford 2011
[57] Schneider et al 2021; Nabi et al. 2018; Kleres & Wettergren 2017
[58] Kleres & Wettergren 2017
[59] Feldman & Hart 2018

overwhelming and hopelessness among people in face of the climate crisis.[60] This should beware however from 'brightsiding' – there is a balance to be struck between not overloading people with fear, and not painting an unrealistically rosy picture of how the future will be.[61] An authentically positive framing of climate change is one that is constructive, not one that suggests 'everything will be fine'.[62]

However balanced climate communication presents climate, it may trigger feelings of anxiety and despair, once people take in that climate change is real and close and affecting them personally,[63] and climate communicators may also have those feelings themselves.[64] This is not unusual – however it is often not a subject in conversations, though connecting with people that have similar feelings is one approach of helping people to deal with eco-anxiety.[65] Climate communication could explore how it can acknowledge these feelings and provide spaces for people to hold them.[66]

Principle 4: Bring climate home – highlighting visions & solutions Some thoughts on how to put this into practice	
1. Personal conversations	– Speak about adverse local effects of climate change you have experienced personally and ask for experiences of your conversational partner. – Share that you are taking climate action and how you feel about it. – Use current events and incidents that are linked to climate as a starting point for a climate conversation.
2. Giving a talk **3. Climate campaigning**	– Show how people like you and me are taking action. Do so by showing authentic real life examples. They are easily understandable and build credibility. – Show local consequences of the climate crisis that are a threat to what people really care about, and how people are responding to these risks. – Use moments of proximity as a window of opportunity for communicating on climate – e.g. international political decision-making processes, heat waves, or visible collective climate action. – Post-weather-disaster situations may pose such windows of opportunity, too. But they need to be handled with care, with a focus probably on humbly offering information on long-term preparedness of communities.
4. Policy-making	– Moments of proximity may also be windows of opportunity for climate-policy making – make use of them. – When designing policies to lower greenhouse gas emissions, be aware that communities and people's place attachment could be a resource and power you can tap into.

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[60] Moser 2016, Melloh et al. 2022

[61] For example, British workers in the fossil fuel industry reacted with cynicism to the notion of re-training programmes, in a context where further education colleges are being closed in their neighbourhoods. (Webster et al. 2022)

[62] Putting this into concrete words could be something along the lines of: 'We need to be realistic. These changes will not be easy. But we can do it.'

[63] IPCC WGII 2022, Stoknes 2015

[64] Norwegian economist and psychologist Per Espen Stoknes devotes a specific chapter ('Stand up for your depression!') to this issue in his 2015 book 'What we think about when we try not to think about global warming'. He not only explores these feelings from a scientist's perspective but also gives an insight of his personal way of dealing with them.

[65] Baudon & Jachens 2021. Another approach is encouraging people to take personal action (Baudon & Jachens 2021; Gunasiri et al. 2022).

[66] Climate Cafés as supported by the UK Climate Psychology Alliance are one way of hosting such spaces.

5. Use frames and narratives in a considered way

- **Do** reflect on the words, narratives, examples and frames you use, and how they resonate with your target group.
- **Don't** expect your target group to connect to the framing that works for you personally.

Intentionally or unintentionally, all messages about climate change are 'framed' by the words and formulations we use to describe the issue in a simplified way.[67] For example, one person may describe climate change as an 'environmental issue', another as a 'risk to the economy', and still another as a 'public health issue'. There has been a lot of research showing that the framing of climate influences the associations people have.[68] A certain framing may cause different associations in different audiences – depending on whether the frames resonate with their world views, values and identity.[69] This depends also on the specific cultural, political and social background of a society, and successful framings from one national context need not automatically be transferable to other countries. In order to connect to target groups in a positive way, climate communication can build on this knowledge.[70] The following table presents exemplary framings and narratives that have been found to resonate well with centre-right audiences in the UK.

Framings & narratives that have been found to work with centre-right audiences in the UK[71]	
Do	Don't
→ do use narratives along 'balance', 'common sense', 'responsibility' and 'doing your bit'	→ don't use environmental and left-wing language (like 'revolution', 'eco', attacks on oil companies, 'capitalism', 'rich' vs 'poor', or pictures of ice bears)
	→ don't ignore differences in means and motivations
→ do talk about 'clean energy', 'dirty fossil fuels' and 'renewing the energy system'; and frame energy-efficiency in terms of 'avoiding waste'	→ don't frame the energy transition as 'revolution' and 'radical change'; and don't focus on 'preventing fuel poverty'
→ do talk about renewables as a way to increase energy independence and self-reliance for Britain	→ don't assume that people connect the dots between climate change, net zero and energy
→ do talk about the UK working with other countries on climate	→ don't overlook the importance of communicating efforts undertaking globally by other countries around the world
→ do be honest and open about challenges of transitioning to a low carbon society	→ don't focus on investment and job opportunities in the low-carbon economy as believe in them is mixed

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[67] For a definition of 'framing' see the glossary at the end of this guide.
[68] For an overview of studies on framing in climate communication see e.g. Balludovich et al. 2020
[69] Corner et al. 2014
[70] Nisbet 2009 is an early and popular work on framing of climate in the US context.
[71] Climate Outreach studied values of different segments of the population in the UK, and resonating framings. The results in the table provide a summary of what can be said on how to engage more effectively with more conservative and mainstream audiences, and across the political spectrum. Conservative Net Zero project results, Climate Outreach 2022; Corner et al. 2016; Marshall et al. 2015; Whitmarsh & Corner 2017

In order to build the broad social support needed for decisive climate action, climate communication has to pay special attention on how to use frames and narratives that resonate beyond the usual 'climate advocates': [72] Climate is often framed unconsciously and intuitively by the ones communicating it. Climate communicators usually are already concerned about climate change and in favour of climate action, and they will naturally tend to frame climate the way they see it themselves. This will typically resonate especially well with people who are, feel and think like themselves, and who are already into climate.[73] It is probably a major task now, however, to engage people who are not so passionate about climate, and these groups may not be reached effectively with environmentalist framings.

Insights on promising framing and narratives around climate can be drawn from existing studies, including narrative testing by Climate Outreach or others for specific national contexts.[74] There is also a range of information on how to frame climate in a way that resonates with mainstream audiences within certain communities, e.g. faith communities, [75] or on certain subjects, such as carbon pricing.[76] Climate communicators can also do some own research and co-develop narratives and framings with their target groups. In any case it is highly recommended to test framings and narratives with the target group before going public.

Principle 5: Use frames and narratives in a considered way Some thoughts on how to put this into practice	
1. Personal conversations 2. Giving a talk	– Familiarise yourself with framing. [77] – Prepare different framings in advance so you have them ready – e.g. climate can be framed as a religious issue, a youth issue, an economic issue, a health issue, a food issue, etc.
3. Climate campaigning 4. Policy-making	– Develop framings around climate policies and climate action that resonate with people's values. – Cultivate consistent use of language, narratives and framing throughout all parts of the organisation and all parts of the government – including different ministries and departments. Develop practical materials and advice that can be used throughout your organisation to ensure this.

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[72] Whitmarsh & Corner 2017
[73] Whitmarsh et al. 2013
[74] E.g. for UK https://climateoutreach.org/britain-talks-climate/ and for Germany https://climateoutreach.org/uebers-klima-reden
[75] Marshall et al. 2016
[76] Partnership for Market Readiness (PMR) et al. 2018
[77] If you want to dig deeper into this, linguist and cognitive scientist George Lakoff provides an introduction into framing with a focus on the US context in his 2004 and 2014 books.

6. Use imagery to tell powerful stories

- **Do** include stories and choose effective imagery to illustrate them. Why not also communicate your own authentic story, too?
- **Don't** rely on pure graphs, facts, and scientific language as the most effective way of communicating climate – our more emotional side needs to be addressed, too.

There is a body of evidence showing that the way we talk about an issue is highly relevant: We tend to make sense of any given issue through stories we tell each other about it and the images they create in our minds.[78] Personal stories can shift climate change beliefs: [79] They show the human faces behind an otherwise abstract issue. Stories speak to the more emotional part of our brains, that is not easily reached by graphs or statistics, but central for our moral risk-perception and motivational processes.[80] Climate communication can build on these insights by authentically including story-telling elements.[81] This can include the collection and exchange of real world stories on climate change and climate action as currently piloted in a local storytelling exchange in the UK.

In general, important components for a good story seem to be: a structure including e.g. challenges, planning and emotional high points (meaningful events), as well as describing in some detail the objects and events involved.[82] While it is the nature of climate communication for public engagement to be instrumental (the objective being getting people engaged with climate), it may be valuable to reflect on the responsibility that comes when communication touches on emotions.[83]

The 'visual language' used to communicate climate is also crucial and images are a powerful tool to complement a verbal story.[84] That is especially true for the ever growing digital communication landscape where images are even more central.[85] There is quite some research on effective climate visualisation.[86] Based on the scientific evidence,[87] 'Climate Visuals' provides both a set of principles for more effective visual communication (provided in the box below), as well as a growing image library based on these principles.[88]

→ Climate Visuals – Core Principles

1. Show real people – not staged photo-ops.
2. Tell new stories.
3. Show climate change causes at scale – a congested highway rather than an individual driver.
4. Climate impacts are emotionally powerful – couple with concrete action people can take.
5. Understand your audience.
6. Show local (but serious) impacts – with persons and identifiable emotions.
7. Be careful with protest imagery – they resonate mainly with activists and campaigners.

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[78] Bruner 1991
[79] Gustafson et al. 2020
[80] Roeser 2012
[81] For example, Bloomfield & Mankeltow (2021) make suggestions for how story-telling could strengthen IPCC reports in order to increase public understanding and engagement.
[82] McCabe & Peterson 1984
[83] E.g. Downs 2014; Roeser 2012
[84] O'Neill & Smith 2014
[85] Wang et al. 2018
[86] E.g. Feldman & Hart 2018; O'Neill & Nicholson-Cole 2009; O'Neill & Smith 2014; Wang et al. 2019
[87] Chapman et al. 2016
[88] https://climatevisuals.org/

Principle 6: Use imagery to tell powerful stories	
Some thoughts on how to put this into practice	
1. Personal conversations **2. Giving a talk**	– One very authentic and probably powerful story is your own personal story. Reflect a bit on your climate journey and share it (how you became engaged with the issue, why it concerns you, what you are doing, also including your possible doubts, vulnerability or feelings of guilt). – Include pictures, when you give a talk, and select them carefully according to the Climate Visuals principles.

3. Climate campaigning
4. Policy-making
	– Make use of the evidence base on effective imagery when selecting photos for any material you produce.
	– Use the Climate Visuals database for finding pictures, or try to find material on other picture platforms.[89]
	– As there is a lack of available images that comply with the Climate Visuals' guidelines, you can try to generate engaging climate images on your own, and make these available to climate communicators more broadly. Participatory photography may be a way to generate more localised and powerful climate imagery.
	– There is an argument that the way we deal with climate lacks 'pathos' and a sense of purpose. A narrative structure that can bring some pathos into a piece of communication could look like this: [90]
	  1. Where are we?
	    (incl. mourning for what is lost and at stake)
	  2. How did we get there?
	    (incl. gratefulness for achievements of our parent and grandparent generations and the heroes and amenities of the fossil fuel age)
	  3. Where are we trying to go?
	    (we can now decide – what future do we want to go to?)
	  4. How to get there?
	    (what do concrete solutions look like?)
	  5. Who are we?
	    (referring to values, especially some of the shared, universal values)

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[89] For example, pixabay.com provides images that can be used freely under a Creative Commons 0 license (CC0).
[90] Based on Evans (2017)

7. Provide accurate information and be careful communicating uncertainty

- **Do** use clear, non-technical language, and easily understandable words.
- **Don't** put too much emphasis on 'uncertainty' and rather lead with what you know.

For many years, climate communication was practiced with a strong focus on filling people's information deficits. This followed the assumption that once provided with enough knowledge, people would start to care for and act on climate.[91] However, this approach has failed. It is counterintuitive, but there is now a lot of evidence showing that what people think about climate change, and how much they care about it and act on it, is *not* straightforwardly related to how much they know about the topic.[92] Accurate information on its own is not sufficient for effective public engagement. Achieving this requires connecting with the values of people, and the understanding that people form their beliefs on the basis of their 'tribe'.

This doesn't mean that accurate, clearly delivered factual content does not play a role. Explanations and information can help to improve the often rather superficial public understanding for climate change.[93] Furthermore, presenting incorrect information can undermine credibility, and especially so if the communicator is perceived as an expert.[94]

So what evidence is there on what proves effective in this informational part of climate communication? To start with, there is an almost universal consensus on climate among climate scientists (climate change exists, it is caused by humans, and it is indeed very threatening for humanity), with the latest IPCC reports as a very sound evidence base.[95] In general, there is evidence that the perception of a scientific agreement on climate has the potential to enhance public support for climate action.[96] However, there is a debate on whether this is universally true, with hints that especially polarised audiences (like American Republicans) have also shown resistance when presented with the scientific consensus.[97] It seems that social context and actual communication situation matter here.[98]

The effects of climate change like heat waves have become clearly tangible for many people, and the number of climate sceptics has decreased over the last years in societies such as Great Britain, Australia and Germany.[99] A focus can then be on conveying facts in an easily accessible manner. This includes naming facts clearly and putting them in familiar words. Some terms and phrases may seem obvious and self-explanatory to climate communicators (e.g. '100% renewable' or 'net zero by year X'), but could actually be opaque or misunderstood by general audiences.[100] The use of metaphors and analogies has been found to be effective [101] – for

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[91] Moser 2016
[92] E.g. Shi et al. 2016; Sturgis & Allum 2004; Kahan et al. 2012.
[93] Moser 2016. For example, many people do not connect the dots between climate change and energy (see Climate Outreach 2022).
[94] National Academies of Sciences, Engineering, and Medicine 2017
[95] IPCC WGI 2021, IPCC WGII and WGIII 2022
[96] e.g. van der Linden et al. 2015
[97] Chinn & Heart 2021
[98] Bayes et al. 2020
[99] Wang et al. (2020, 2021) for Britain talks Climate; Melloh et al. (2022) for Germany talks Climate. Hornsey et al. 2022
[100] Therefore, messages could start with what these concepts and targets mean for people's everyday lives, rather than with the targets themselves: "Less pollution from car exhausts means cleaner air for our children to breathe, and fewer cars on the roads makes it a safer environment for them to play in. And it also promotes environmental protection. That's why we're aiming for a 50% cut in vehicle emissions by year X."
[101] Corner et al. 2018

example describing the atmosphere as a 'bath tub' filling up with greenhouse gases, which illustrates the effect of greenhouse gas accumulation in the atmosphere.[102]

Visual data often is important to deliver information, too – but it can be hard to understand for lay people. A guide for IPCC authors and researchers provides some evidence-based recommendations on how to design graphics in an accessible way:[103] For example one could reduce complexity in graphs, by focussing on the essential information, highlighting information, and building up information sequentially.[104]

Then, scientific findings often include sources of uncertainty, and there may also be conflicting information e.g. from diverging model estimates.[105] That is why, for example, a range of variability is given for climate scenarios, or why specific extreme weather events are allocated to climate change with a certain probability. There are many studies on how to deal with this uncertainty in climate science communication, and to what degree knowledge about uncertainty matters for effective climate policies.[106] It seems that people's understanding was improved when the reasons for uncertainty were explained.[107] Another recommendation by climate communication scientists is to not focus on what is uncertain, but on what is known for certain.[108]

Principle 7: Provide accurate information and be careful communicating uncertainty Some thoughts on how to put this into practice	
1. Personal conversations	– If you encounter misconceptions and fake facts in your climate communication activities, you may want to consider reliable and science based practices that are available for de-bunking and fact-checking. [109]
2. Giving a talk 3. Climate campaigning 4. Policy-making	– Rely the facts you choose to present on sound sources and be transparent about these sources. – Avoid technical terms or translate them, to meet the level of literacy and numeracy of your target group. – Lead with what you know. Deal with uncertainty by putting it into context, explaining what it means in non-scientific language. Make clear that 'uncertainty' is not an excuse to not engage: The climate issue is both highly relevant and highly complex, thus we have to take a precautionary and learning approach. – Be confident to communicate on climate, although you do not feel like an expert. Even most climate scientists are only experts for a fragment of the overall and highly complex climate issue. If a question arises, you cannot answer, a possible reaction could be 'That is a good question! I will look that up for you.' and follow up by researching the answer and transmitting it to the asking person.

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[102] Guy et al. 2013

[103] Harold et al. 2017

[104] Harold et al. 2016

[105] Kause et al. 2021

[106] Moser 2016; Patt & Weber 2013

[107] Kause et al. 2021

[108] Corner et al. 2018; CRED & EcoAmerica 2014 (for a predecessor to this guide: CRED 2009). As part of a broader team at the Columbia Center for Research on Environmental Decisions, Ezra Markowitz, a scientist studying people, societies and the environment, has written a very comprehensive 96 page guide on how to effectively communicate climate – elaborating on how to make science meaningful and on how to deal with uncertainty in more detail.

[109] The independent and non-profit science education organisation 'Skeptical Science' provides a very helpful resource for identifying and correcting misinformation on climate, that is also acknowledged by IPCC and NASA. It provides information on typical misinformation on climate in 20 different languages: https://skepticalscience.com/

How to turn concern into action

8. Provide spaces for interaction

- **Do** create spaces for conversation and connection in your climate communication.
- **Don't** see climate communication as a pure one-way activity.

Climate communication has often been understood as 'strategic messaging' and 'one-way-communication', mostly elite-led; and quite some emphasis has been on 'optimizing the message'.[110] People tend to have been seen as rather passive and on the receiving end of communication, and the perceived challenge was to design content in a way that brings people on board.[111] There seems to be a necessity to expand this unidirectional approach in order to broaden and strengthen personal and public engagement,[112] and especially so as this engagement needs to be kept up for years to come. Environmental education science underlines that the construction of knowledge needs social interaction, too,[113] with discussions and debates providing helpful opportunities to exchange and contrast perspectives.[114] This paradigm shift from 'transmission' to 'interaction' is also reflected in broader communication theory.[115]

There is a broad range of more participatory models of climate communication, and less research has been done on this issue than on the other principles in this working paper.[116] One interactive form of communication is conversation between social peers. Discussing climate within one's close social network seems to have positive effects: People can learn about key climate facts and tend to believe them, and maybe even more important, they learn that their close ones care about climate.[117] Encouraging interpersonal communication has also been found to nurture an increase in political activism.[118] Hence there are some good reasons why climate communication could motivate people to integrate climate into everyday conversations.[119] Small groups settings can also play a role, as they allow for discussions,[120] and exchange of personal stories. In addition, they offer a space for expressing fears, doubts and challenges around climate and climate action, which can be supportive for the many people struggling with this.[121]

Then, climate communication can also include dialogues around climate and climate action in the public sphere.[122] One example for such an approach is the 'Curious Climate Tasmania' project that fostered conversations between scientists and communities in Tasmania.[123] This project benefitted from scientists' open mind and flexibility, and from creating partnerships

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[110] Moser 2016; Brulle 2010
[111] Pearce et al. 2015
[112] e.g. Badullovich 2022; and Brulle (2010) drawing on the evidence base for social change and mobilization.
[113] Dillon 2003
[114] Monroe et al. 2019
[115] Ballantyne 2016
[116] Moser 2016
[117] Goldberg et al. 2019
[118] Roser-Renouf et al. 2014
[119] Climate Outreach has developed a 'Talking Climate' handbook on this issue and also a toolkit for a 1.5h workshop that aims at empowering people for empathic and respectful climate conversations. (Webster & Marshall 2019 for the Handbook, and https://climateoutreach.org/reports/talking-climate-workshop/)
[120] Monroe et al. 2019
[121] Baudon & Jachens 2021
[122] Pearce et al. 2015; see Climate Outreach (2016) for an exemplary tookit that helped organise a public conversation series on climate change → https://climateoutreach.org/download/22494/
[123] Kelly et al. 2020

with radio broadcast and a team of journalists. The project organised an ongoing dialogue, where scientists were also on the learning end about what really matters to people, and what were their concerns and fears around climate. This created trust and agency, empowering for transformative action – and also provided a source of alternative knowledge.

Another approach, where reciprocity is sought between climate science and lay people, and where alternative, public and non-scientific forms of knowledge creation are pursued, has been proposed to enrich IPCC work.[124] From a broader perspective, this approach is also underlying so-called 'Living Labs' – a research design in sustainability transition research, where scientists interactively engage with practitioners from research design, to knowledge generation, through to implementation and evaluation of solutions in order to advance both transition knowledge and the transition itself.[125] Such approaches probably have the potential to democratise and further legitimise science, [126] and they seem promising for climate communication.

Though this may be challenging, social media communication can also be designed in a way that enhances interaction, and there seems to be a potential that this could effectively nurture social debate on climate.[127] However, this has not been reviewed in further detail for this text.

When it comes to concrete climate policies, there is evidence that dialogic and deliberative processes can increase openness, understanding, empathy and acceptance; and their potential to do so is probably higher than that of one-way transmission of information.[128] This can include, but is not restricted to citizens' assemblies on climate change (such as in Ireland, France, or the UK) – and such forms of deliberative democracy are believed to be a 'necessary and potentially transformative ingredient in climate action'.[129] Such a more inclusive mode of policy-making could enhance collective engagement with an issue, and equip people with the know-how and technologies needed to address it,[130] and it could also develop solutions that are better in terms of pursuing greater justice and the public good.[131] Challenges to such approaches include 'building capacity for reflexivity, communication, and public engagement among government actors'.[132]

Another approach takes into consideration that many climate solutions have to be implemented by collective action and need cooperation by different stakeholders: It tries to nurture constructive discussions and relationship-building between the different actors involved.[133]

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[124] Dudman & de Wit (2021)
[125] Hossain et al. 2019
[126] Dudman & de Wit (2021)
[127] León 2021
[128] Moser 2016; Willis et al. 2022
[129] Willis et al. 2022, p1
[130] Pearce et al. 2015
[131] Romsdahl 2020
[132] Romsdahl 2020, p145
[133] Badullovich 2022 – and this may even be more helpful for climate policy engagement in more polarised contexts.

Principle 8: Provide spaces for interaction Some thoughts on how to put this into practice	
1. Personal conversations	– Make climate a topic in your everyday conversations. – Be careful you aim primarily at listening and understanding – and find more tips in the Talking Climate Handbook.[134]
2. Giving a talk	– Consider integrating a space for peer-to-peer-conversations in your talk (like a 2 minute buzz group where everybody talks to their neighbours on a specific question). – Motivate people to talk with their friends and family about climate, and about anything they do around climate.
3. Climate campaigning	– Design climate campaigns in a way that they provide opportunities for people to connect to each other and interact. – Consider how such dialogic settings can create valuable new knowledge and how this new knowledge can inform climate solutions (e.g. your future work, concrete solution implementation, or policy processes).
4. Policy-making	– Take UNFCCC Article 6 seriously, which asks governments to enable public participation in developing adequate responses to climate change. [135] – Create deliberative processes to get the public more engaged on climate, to increase acceptance of climate policies, and to improve climate solutions. – Make sure to devote the necessary budgets to deliberative processes, and to build capacity for them within the government. Deliberative processes need to be of high quality, and have an impact on policy action. People will easily notice when participation is symbolic only, and then rightly lose trust in the policy-making process.

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[134] Webster & Marshall 2019
[135] United Nations 1992

9. Make climate action an issue of social belonging

- **Do** show that 'people like us' have begun to take climate action.
- **Don't** forget to place individual action into the broader context of collective action that is needed for real change.

There are few influences more powerful on people's attitudes and behaviours, than their friends and social networks, and the beliefs and behaviours they perceive as normal around them.[136] These social cues play an important role for what we individually decide to do: we tend to not act when we perceive the ones around us do not act, and we tend to act when the ones around us do act.[137] Social psychological research has consistently shown that such 'second-order beliefs' are an important influence on people's own beliefs – in the sense that they establish (perceived) social norms, and a shared sense of the 'middle ground' on a range of issues, including climate change.[138] These social norms, and the related feelings of belonging, identity, and in-group loyalty can motivate support for climate policies and taking climate action.[139]

If climate communication succeeds in delivering social proof that 'people like you and me are taking action' it can shift social norms. Placing any individual action into the broader context of collective action will allow people to see their action as a contribution to a larger process. Showing a range of action, including engagement beyond consumer choices, is valuable in that it broadens common perspectives on what constitutes individual climate action.[140]

A challenge is posed by the fact that climate action is often not yet the dominant behaviour in a group. It has proven effective here to show proof of others *changing* their behaviour, and thus underline the wider evolvement of norms over time. This can lead people to befriend with the change, although it may be against current norms.[141] For example, a study in the UK showed that knowing only person that has given up flying for climate reasons had led half of the study participants to reduce their own flying and ¾ of study participants to somehow change their attitudes on flying and climate more widely. The effect was even larger, when the non-flier was an influential person like a professor.[142]

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[136] Mackay et al. 2021
[137] E.g. Hawkins et al. 2018. Bouman et al. 2021 highlights the effect of people already being in favour of environmental protection, but falsely believing members of their in-group are not, and thus refraining from climate action.
[138] Mildenberger, Tingley, 2019
[139] Nolan 2021; Fielding, Hornsey 2016
[140] For more thoughts on personal action see also the following key principle.
[141] Sparkman et al. 2021
[142] Westlake 2017

Principle 9: Make climate action an issue of social belonging Some thoughts on how to put this into practice	
1. Personal conversations	– Talk about how you personally are taking climate action and of how others you know have started to do so.
2. Giving a talk	– Tell real stories about 'people like us' that have changed behaviour (or 'organisations like us' that are on their way to become carbon neutral etc.). – Use examples, and especially examples your audience is familiar with. Seeing three examples for a certain thing (e.g. specific climate action) is said to give us a feeling that this is a rule of how things are.[143] – Share what you yourself are doing about climate.
3. Climate campaigning **4. Policy-making**	– Ensure visibility of low carbon solutions, for example rooftop solar power, electric car charging, car-sharing hubs and bike parkings. Enable the users and owners of such solutions to become advocates and share experience. – Enable and support conversations and exchange on climate in small groups – e.g. in public space or workplaces. Dialogue helps people make sense of an issue. And some solutions might be generated in such settings, drawing on collective intelligence. – Make sure you are taking meaningful climate action on a personal level, too, and let people know about it. This also increases your credibility.[144]

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[143] Hesebeck 2018
[144] For example, one result of the Climate Outreach Germany Talks Climate project was that people particularly liked the fact that a minister had started flying with ordinary planes (instead of separate government planes) in order to protect the climate (Melloh et al. 2022).

10. Encourage meaningful personal action

- **Do** encourage your target group to take personal action on climate – and talk about it.
- **Don't** privatise climate action, however. While social change needs individuals to act, it finally emerges as a result of interaction between individuals, business and governments.

Taking in that the climate crisis is a serious threat and that the required changes are transformational can feel overwhelming.[145] Personal action can be a coping strategy and help to endure the ongoing changes more easily.[146] Furthermore personal action can help to reduce cognitive dissonance – a widespread phenomenon where one's behaviour is inconsistent with one's values.[147] And maybe most importantly, motivating people to take action is probably the objective of any climate communication, as personal action is needed to drive social change.

There are two important directions of personal climate action that seem essential for overall change: Firstly, reducing individual 'carbon footprints', and secondly, acceptance for climate regulations and engaging with the political processes needed to bring about these regulations. To both ends, climate communication can play an important role.[148] Up to now, there has however been a lack of attention on how to engage people regarding the political,[149] and probably climate communication could try to better include this form of 'political engagement'.

To start with, what can be said about personal lifestyle changes? Discussions on climate solutions are often technology driven, focussing e.g. on the adoption of new energy technologies or electric vehicles. Less attention has been paid to the so-called 'demand side' of energy.[150] However, the recent IPCC report estimates the demand-side of energy to have the potential to reduce 40-70% of emissions.[151] In order to realise this potential, behaviour changes play a decisive role. Personal action on this aspect includes taking climate-friendly decisions on travelling, diet, housing and using things. In order to empower people to take informed decisions, communication around these issues can provide information on 'big points', that is changes in lifestyle that are most relevant in terms of reduced greenhouse gas emissions.[152] When connected to one's identity and values, reflecting one's own climate behaviour seems also to make people more likely to support climate policies.[153]

People are well aware, that personal lifestyle changes need to be complemented by actions taken by the rest of the population, and by governments and business.[154] Therefore, individual climate action needs to be put into this broader context, and highlight that there is a need for laws and regulation that support climate friendly lifestyles (and green businesses).[155] Climate communication can also try to motivate people to engage with the political processes that bring

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[145] Verlie 2019; Moser 2016

[146] Gunasiri et al. 2022; Baudon & Jachens 2021

[147] E.g. Stoknes 2015.

[148] Sparkman et al. 2021; Ockwell et al. 2009

[149] Carvalho et al. 2017

[150] Creutzig et al. (2018)

[151] IPCC WGIII 2022

[152] Bilharz & Schmitt 2011

[153] Sparkman et al. 2021

[154] Wang et al. 2020

[155] Insights into specific national contexts may be necessary to fully understand people's attitudes – and they may hold some surprises: For example, environmental psychologist Michael Hall and colleagues did a study in the highly polarised US American society, where they found that the group of 'Highly Concerned' about climate were most supportive of climate policies but least likely to report individual-level actions, whereas the group of the climate 'Sceptical' rather opposed policy solutions and were most likely to report personal climate action on the individual level. (Hall et al. 2018)

about these laws and regulations.[156] Such social organising and advocacy has been found to underpin social change, e.g. by 'shifting the possibility space of public policy on climate change mitigation'.[157]

People are more likely to take action, when they perceive themselves as being able to make a difference, a concept scientist refer to as 'self-efficacy'. This includes believing they are capable to take action, as well as that this action can be effective.[158] To motivate people, climate communication can show them how they can successfully implement relevant lifestyle changes and how they can effectively engage with political processes,[159] e.g. by providing them with examples of people doing so, and helping them build up the required knowledge. There is an added value when people talk about the actions they take: This contributes to shifting social norms – it gradually becomes the 'new normal' to engage with climate.[160]

Principle 10: Encourage meaningful personal action Some thoughts on how to put this into practice	
1. Personal conversations	– Speak about the climate action (both lifestyle changes and political action) you personally undertake, and what motivates you to do so. – You may well acknowledge perceived struggles (e.g. cost and time considerations, doubts about efficacy, potential lack of social acceptance within peer group). – Why not suggest to do something collectively?
2. Giving a talk **3. Climate campaigning**	– Include your own climate action into your communication. – Inform your audience what lifestyle changes have the highest impact (so-called 'Big Points') and encourage them to focus on those. – Create awareness that being climate-friendly in one area (e.g. diet) will not compensate for not being climate-friendly in another area (e.g. travelling) (= counteracting the so-called 'single action bias'). – Recognise that working on one's lifestyle can become exhausting, especially in an environment where political frameworks lack support for lifestyle changes. – Empower people to act as social citizens. This includes helping them to identify their passion for an issue, defining a level of engagement (like family, friends, neighbourhood, sports club, community, city council, members of parliament, letters to the editor), and finding leverage points where they think they can make a difference.
4. Policy-making	– Design and implement climate policies that support people in adopting climate-friendly lifestyle changes, and make sure that no social hardship arises from these policies. – Make sure that climate policies incentivise and compel ambitious climate action by businesses, too, as this is needed, and people perceive it as fair. – Welcome people who are advocating for climate policies, and encourage them to continue doing so – they provide you with the mandate you need for climate policy-making. – Last but not least: Engage with a climate-friendly lifestyle yourself – you are perceived as 'elite' and people are waiting for 'elite-cues'.

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[156] Some groups in a society may be more open to think about them doing advocacy work than others (Melloh et al. 2022).
[157] IPCC WGIII, 2022. p5-83
[158] Bandura 1982; Maddux 1991
[159] Roser-Renouf et al. 2014
[160] Katharine Hayhoe (2021), climate scientist and a leading expert and practitioner in climate communication based in Texas suggests that people should make sure they do *something* about climate – and most importantly talk about this.

Methodology

Work for this working paper has started with a review of handbooks and guides on climate communication,[161] extracting the various aspects each author names as being related to effective climate communication. By clustering these aspects, a first draft of key principles was evolved and informally discussed with experts on climate communication in the Climate Outreach research team and beyond. Then a broader literature review of scholarly literature and the evidence-based Climate Outreach project reports was conducted, in order to refine the list of key principles and substantiate the principles with concrete scientific evidence. This review included articles that reviewed the whole field of climate communication research in recent years,[162] as well as numerous articles specialising on one or some of the principles. The text at hand is a result of this process.

The scientific literature on climate communication so far concentrates on some areas of the world (with US, UK, Australia, Germany, and Canada being covered most prominently)[163], with less or no country-specific evidence available for many countries and developing countries in particular.[164] In summarising existing research, this text has the same short falling.

This text tries to bridge the gap between science and practice. While for each principle there is a text which is based on concrete scientific evidence (which is referenced), we also include some more explorative ideas on how to put each principle into practice in the table beyond each principle, and a 'do and don't'.

Glossary

Framing
Framing is an integral part in our communication with each other – we do it all the time, mostly unconsciously. Framing means that we use certain words and formulations to describe reality in a simplified way. Framing structures our perception and interpretation of reality in a certain way. Different ways of framing an issue may have different effects on the recipient.

Identity
We call identity the set of essential beliefs, appearance and behaviours of a person (or group) that make them characteristic – both for themselves and for others. Identities tell us (and others) who we are as individuals (such as an ambitious person, a communicative person, a reserved person), in a group or community (such as member of a sports club or faith community, British) or in a role (such as mother or student). Identities are rather stable over time.

Narrative
We usually give account of events or a situation by narratives. A narrative connects situations to the logic of cause and effect and thus helps us to make sense of them. A coherent narrative

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[161] Corner & Clarke 2016; Corner et al. 2018; CRED & ecoAmercia 2014; CRED 2009; Hesebeck 2018; Markowitz et al. 2014; Marshall 2014; Schrader 2021; Stoknes 2015; Webster & Marshall 2019;
[162] e.g. Moser 2016, Moser 2010, Asmi et al. 2017, Kumpu 2022
[163] Asmi et al. 2017
[164] Moser 2016

includes an explanation of how we believe the event or situation was generated, and what effects it has. Narratives thus lie at the foundations of our cognitive procedures. And as with frames, there are different possible narratives for a certain issue and situation, and we may connect more with one narrative than with another.

Public engagement [165]
A state of public engagement is reached:
- when people embrace pro-climate behaviour changes;
- when people collectively implement climate solutions in the communities they live in, in the companies they work for and the organisations they form part of.
- when people accept climate policies;
- when people hold politicians, and also companies and their peers responsible for climate action.

A person's engagement can be conceptualised as a state comprising the cognitive, the affective and the behavioural level. [166] Therefore, in order to nurture engagement, climate communication needs to reach 'head, heart and hand'. There is no one silver bullet with which to reach public engagement, rather there need to be multiple forms of engagement. Possible actions include campaigns (e.g. broadcast, social media, culture, peer-to-peer), trainings and education (e.g. on how to contribute to climate solutions for specific branches, topics, geographical levels), initiatives enhancing cooperation (such as round tables), and deliberative and participatory political processes (such as Citizen Assemblies).

Qualitative research and quantitative research
When trying to find out more about how people think and how our societies work, social scientists have two sorts of tools in their toolkit: *Qualitative research* is based on data that is generally non-numerical and obtained for example from interviews, focus groups, or case studies. *Quantitative research* is measuring and quantifying facts. The focus is on generating and analysing larger amounts of data, and conclusions are drawn using statistics. Surveys are an important tool to collect data for quantitative research.

Social mandate
A social mandate refers to a growing social consciousness where people feel like climate citizens, absorbing climate change and climate action into their worldviews and their ways of life. They are informed, capable and motivated to take climate action and do so – which in turn compels government, business and their peers to act on climate.

Values
Values are fundamental and basic personal beliefs that guide and motivate our attitudes and actions on a broad range of issues in life. They help us to determine what we consider as important. Values describe the kind of person we want to be, they guide us in our interaction with the world around us. Values differ between people. A person's values will not usually change much over time.

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[165] This draws on Whitmarsh et al. 2013; Rowe & Frewer 2005; Kumpu 2022
[166] Lorenzoni et al. 2007

Climate Outreach

Climate Outreach is a team of social scientists and communication specialists passionate about building a social mandate for climate action. Through our research, practical guides and consultancy services, we help organisations communicate about climate change in ways that resonate with the values of their audiences. We have over 15 years of experience widening and deepening public engagement with climate change, working with a wide range of international partners including government, international bodies, academic institutions, charities, businesses, faith organisations and youth groups.

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