

Transformational Change Methodology

PART II: DEFINING THE ASSESSMENT



01-11-2019

Name Surname

Introductory Guide

Impact Assessment Methodologies

Greenhouse gas impacts



Renewable
Energy



Buildings
Efficiency



Transport
Pricing



Agriculture



Forestry



Sustainable
Development



Transformational
Change



Non-State and
Subnational
Action

Process Guidance Documents

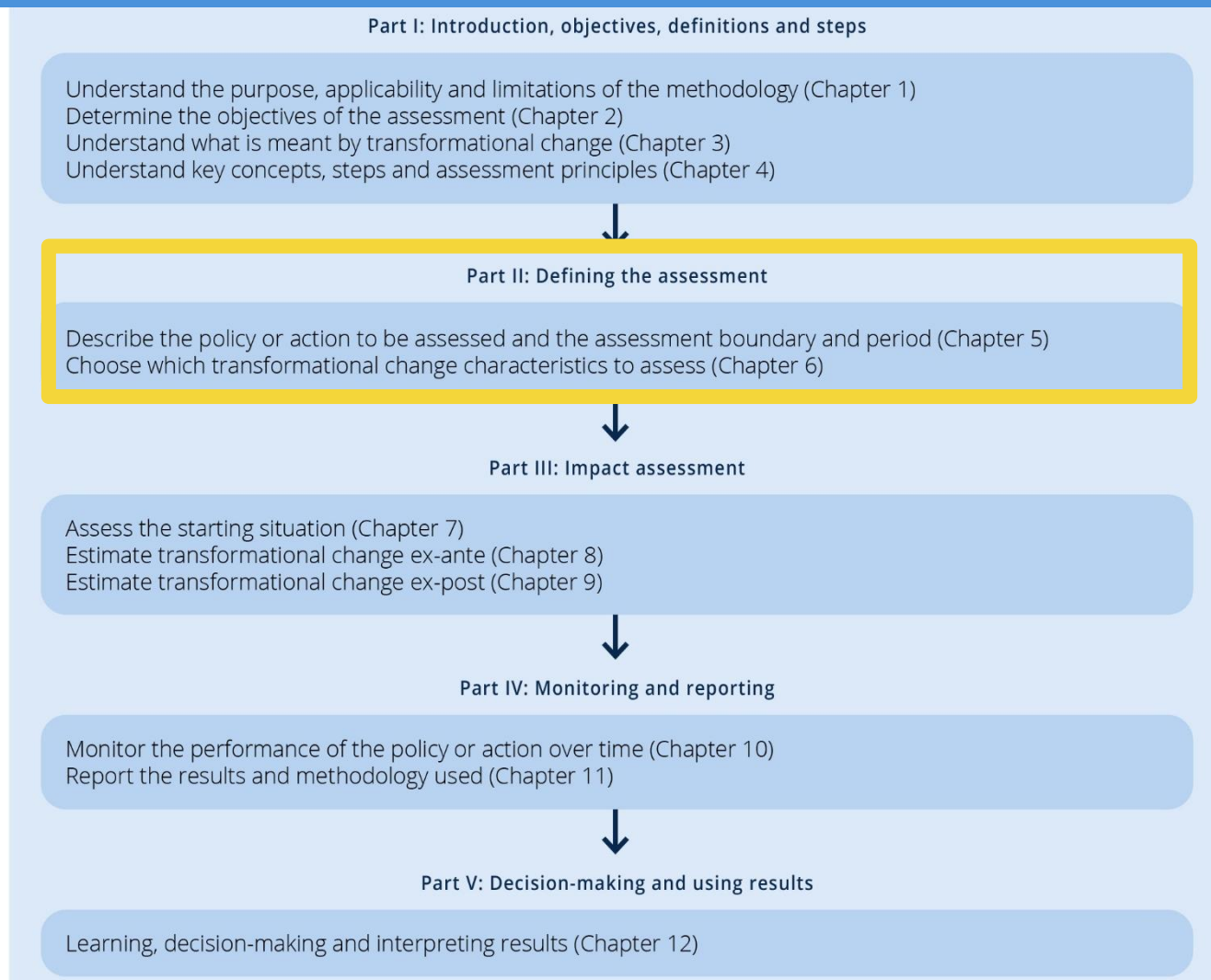


Stakeholder
Participation



Technical
Review

Overview of the methodology



Overview of the methodology

Part II: Defining the assessment

Describe the policy or action to be assessed and the assessment boundary and period (Chapter 5)

Choose which transformational change characteristics to assess (Chapter 6)

This indicates a
key recommendation



Chapter 5

Chapter 6

This is an interactive panel: navigate
by clicking on a particular step

Chapter 5. Describe the policy and scope

Describing the policy or action and the assessment boundary and period

Describe the policy or action to be assessed
(Section 5.1)



Choose ex-ante or ex-post assessment
(Section 5.2)



Define the assessment boundary and assessment period
(Section 5.3)

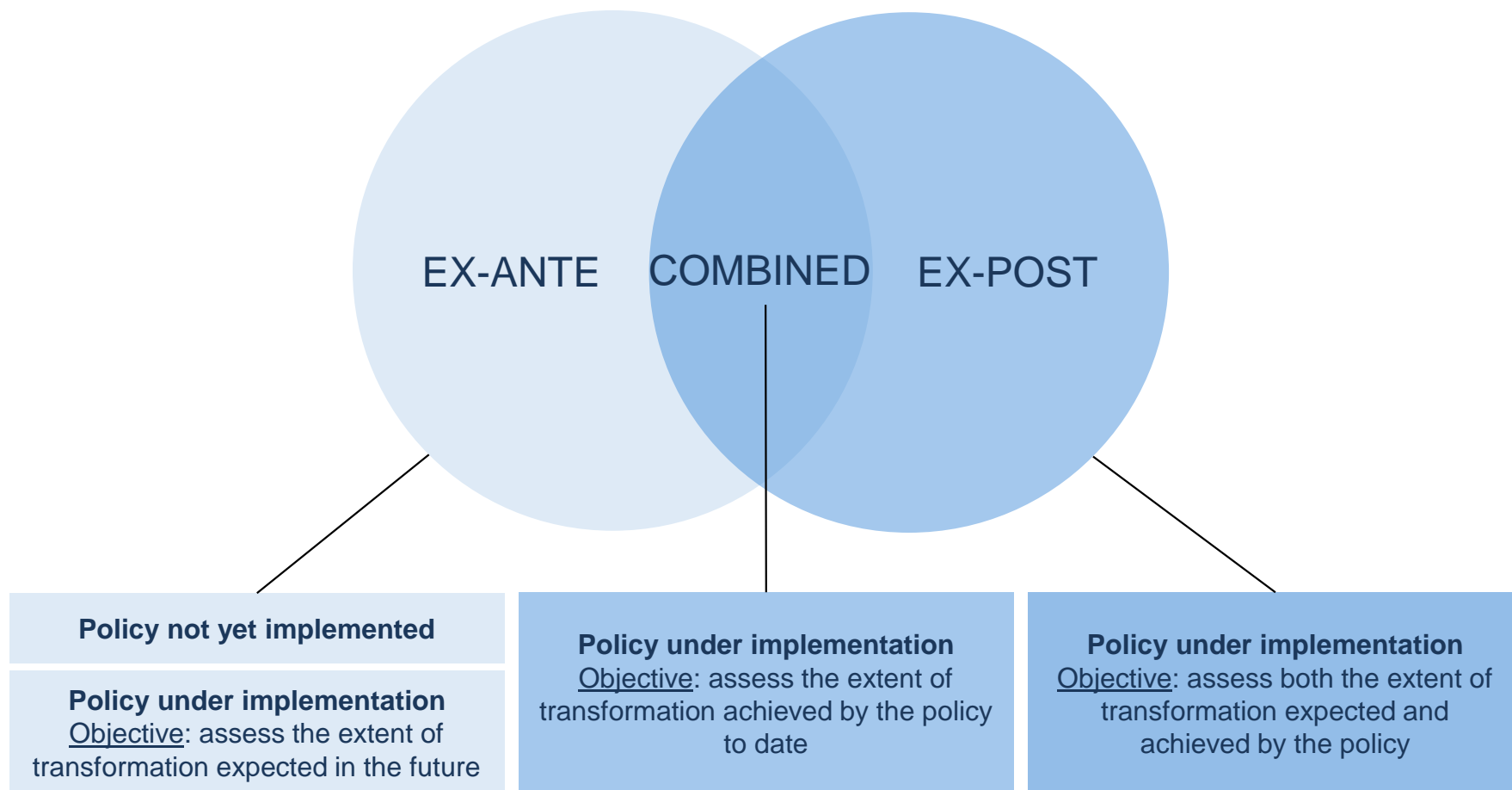
5.1 Describe the policy

TITLE OF THE POLICY			
Type of policy	Description of specific intervention	Status of the policy	Date of implementation
Date of completion	Implementing entities	Objectives and intended impacts	Level of the policy
Geographic coverage	Sectors targeted	Other related policies	Reference

Clearly describe the policy or action (or package of policies or actions) that is being assessed



5.2 Choose ex-ante or ex-post assessment



5.3 Define the scope of the assessment

SCOPE

BOUNDARIES

Impact covered

Geographic coverage

Sectoral coverage

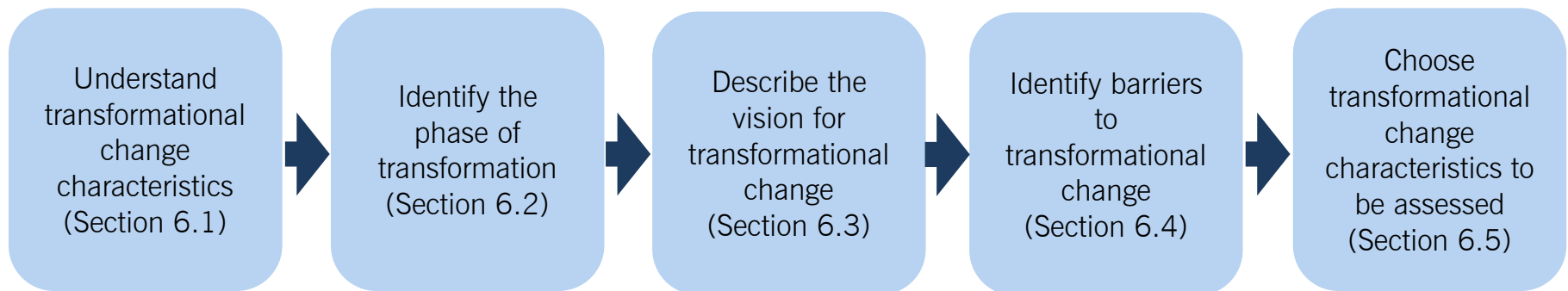
PERIOD

Define the assessment boundary in terms of geographical and sectoral coverage and define the assessment period

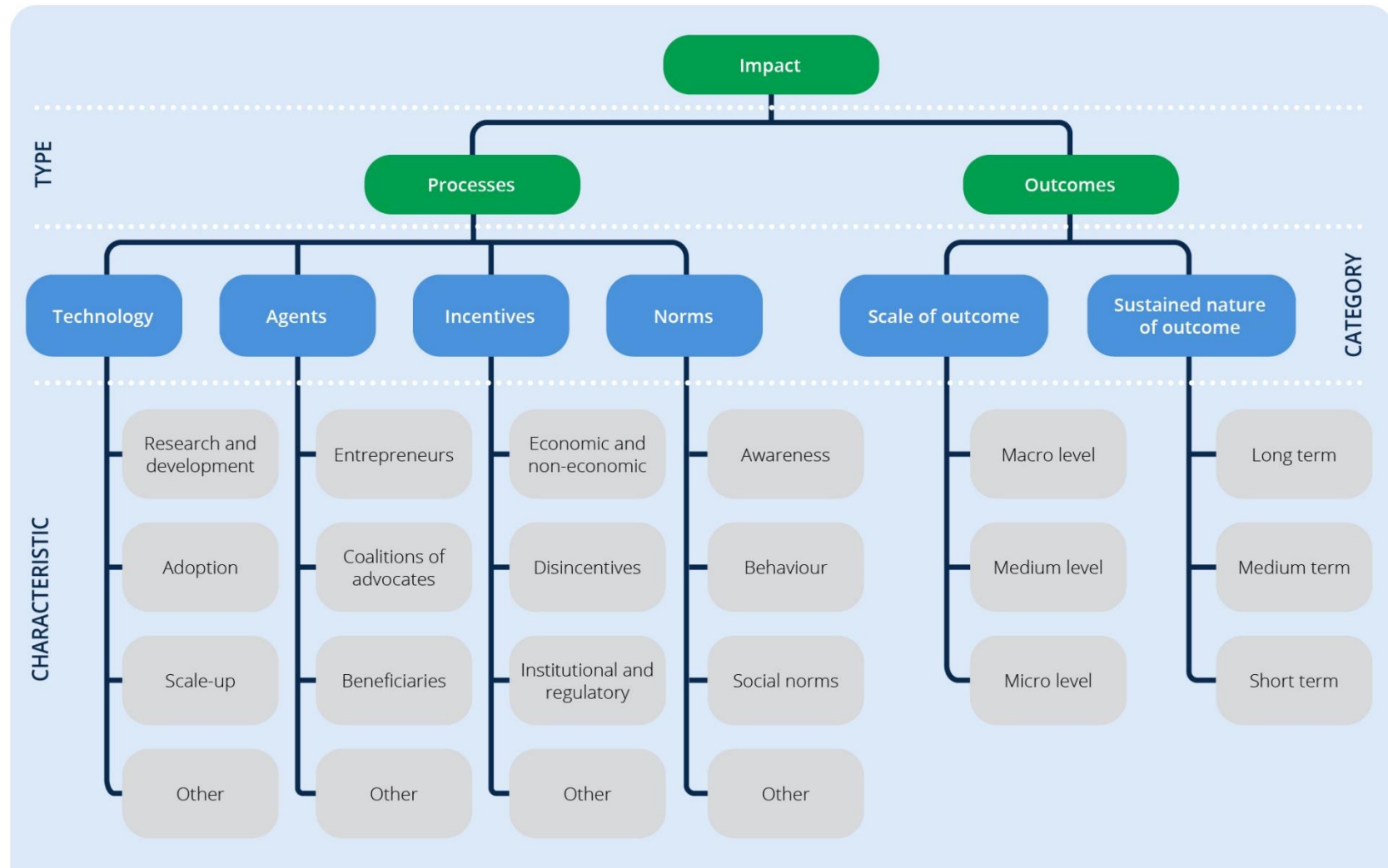


Chapter 6. TC Characteristics

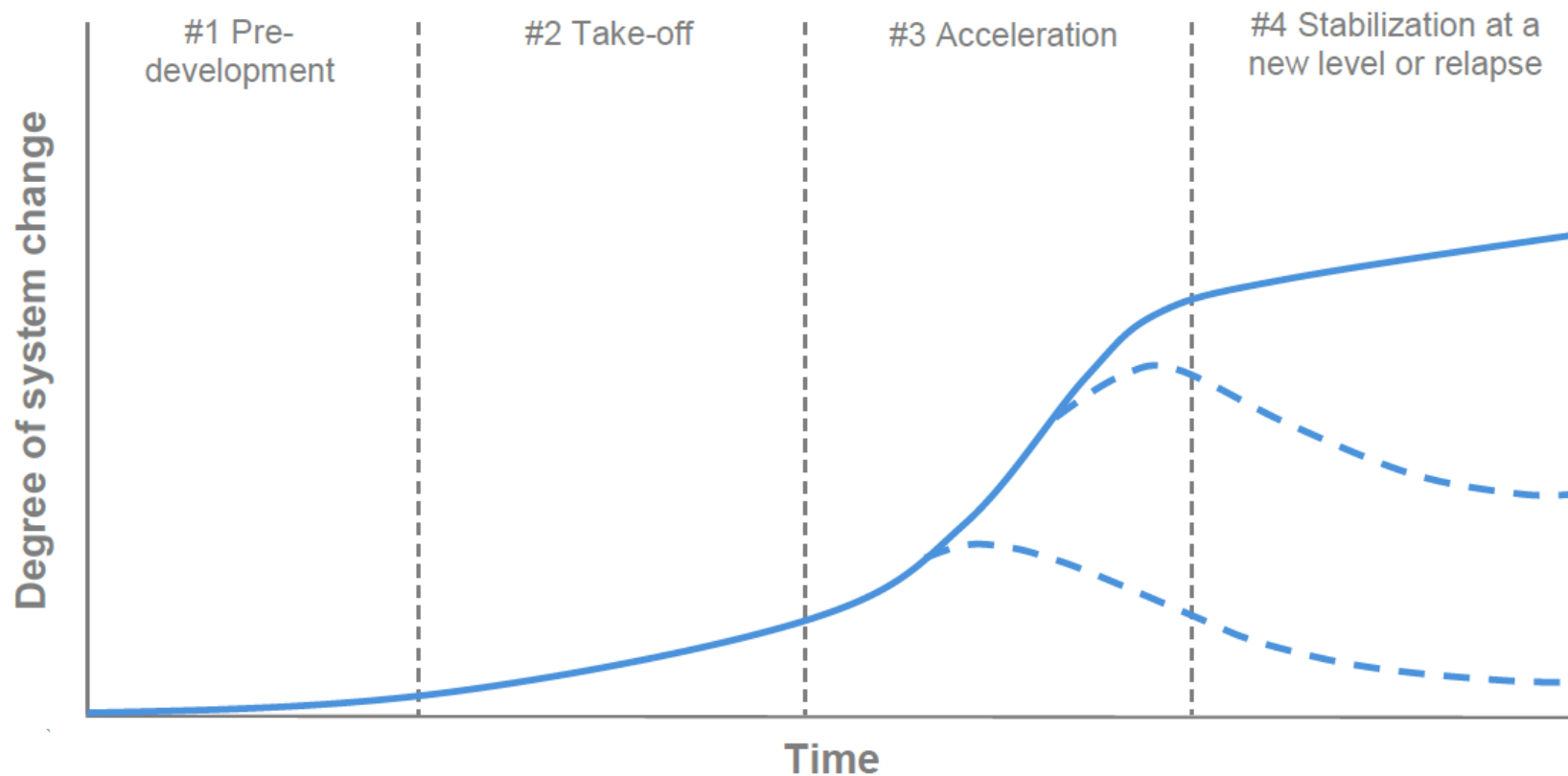
Choosing which transformational change characteristics to assess



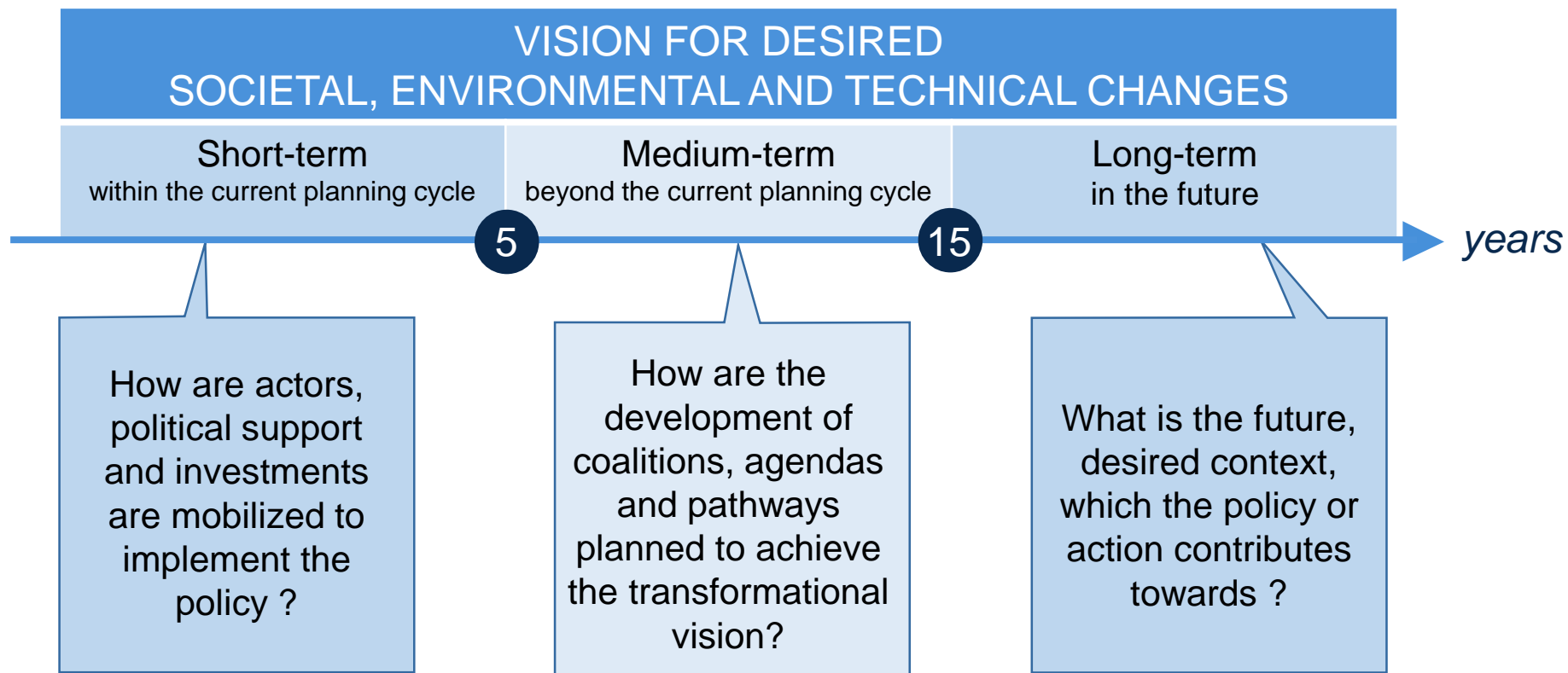
6.1 Characteristics of transformational impact



6.2 Phase of the transformation



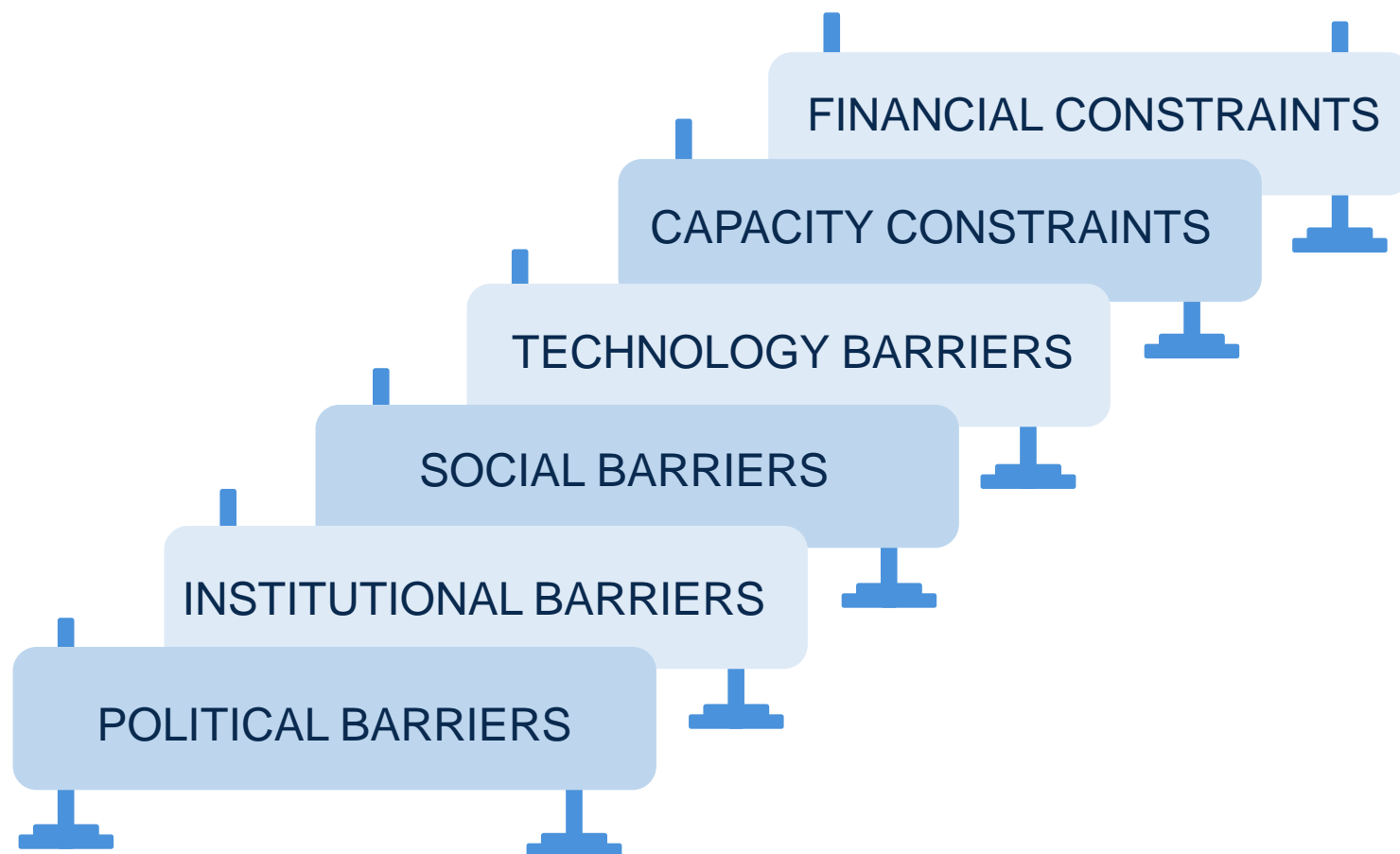
6.3 Vision for transformational change



Describe the transformational vision of the policy or action, through consultation with key stakeholders



6.4 Barriers for transformational change



Identify barriers to transformational change specific to the phase of transformation



6.5 Choose characteristics

Processes

CATEGORY	PROCESS CHARACTERISTIC	DESCRIPTION OF CHARACTERISTIC	RELEVANCE AND JUSTIFICATION																
...	Relevant/ Possibly relevant/ Not relevant																
<table> <tr> <th>RELEVANCE</th><th colspan="3">DESCRIPTION</th></tr> <tr> <td>Relevant</td><td colspan="3">Reason to believe that a characteristic is important for transformational change in the given context of the policy or action</td></tr> <tr> <td>Possibly relevant</td><td colspan="3">It is not clear whether the characteristic is important for transformational change in the given context of the policy or action. Where the relevance is unknown or cannot be determined the characteristic should be monitored over time</td></tr> <tr> <td>Not relevant</td><td colspan="3">Reason to believe that the characteristic is not important for transformational change in the given context of the policy or action</td></tr> </table>				RELEVANCE	DESCRIPTION			Relevant	Reason to believe that a characteristic is important for transformational change in the given context of the policy or action			Possibly relevant	It is not clear whether the characteristic is important for transformational change in the given context of the policy or action. Where the relevance is unknown or cannot be determined the characteristic should be monitored over time			Not relevant	Reason to believe that the characteristic is not important for transformational change in the given context of the policy or action		
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Outcomes

CATEGORY	OUTCOME CHARACTERISTIC	DESCRIPTION: SPECIFIC TO A POLICY OR ACTION
...

Choose characteristics to be assessed based on their relevance to transformational change and the society in which it is implemented



Pilot Case Studies using this Methodology

- Development of a Tonga Energy Efficiency Master Plan
- Assessment of the Transformational Change Potential for the Citizens of the Future Initiative in Bolivia
- Geothermal Energy Development Policy in Uganda
- Assessment of the Transformational Potential of the NACAG Initiative

Thank You

The background of the slide is a photograph showing several pairs of hands, likely belonging to people of African descent, carefully planting young green seedlings into small, light blue plastic pots filled with reddish-brown soil. The hands are positioned over rows of these pots, which are arranged on a surface. The lighting is natural, and the focus is on the hands and the seedlings.

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www.climateactiontransparency.org

ICAT

INITIATIVE FOR
Climate Action
Transparency

5.1 Describe the policy: example

Information	Description	Example
Title of the policy or action	Policy or action name	Grid-Connected Solar Rooftop Programme. Throughout this methodology, it is referred to as the "Solar PV policy"
Type of policy or action	The type of policy or action such as those presented in Table 1.1, or other categories of policies or actions that may be more relevant	Financial incentive policy
Description of specific interventions	The specific intervention(s) carried out as part of the policy or action, such as the technologies, processes or practices implemented to achieve the policy or action	Description of financial incentives: The policy includes two specific interventions: 1) A financial subsidy up to 30% of project/benchmark cost for rooftop solar projects (up to 500KW) in the residential/institutional and social sectors. It also provides concessional loans to solar rooftop project developers. 2) A feed-in tariff for all new grid-connected solar rooftop and small solar power plants
Status of the policy or action	Whether the policy or action is planned, adopted or implemented	The policy has been implemented (currently in effect)
Date of implementation	The date that the policy or action comes into effect (not the date that any supporting legislation is enacted)	1 January 2016
Date of completion (if relevant)	The date the policy or action ceases, such as the date a tax is no longer levied or the end date of an incentive scheme with a limited duration (not the date that the policy/action no longer has an impact)	The provision of financial incentives and feed-in tariff ends on 31 December 2022

Implementing entity or entities	The entity(ies) that implement(s) the policy or action, including the role of various local, subnational, national, international or any other entities	Government funds are disbursed by the ministry to state agencies, financial institutions, implementing agencies and other government approved partners that include renewable energy service providers, system integrators, manufacturers, vendors and NGOs. The feed-in tariff is determined at a national level by an electricity regulatory authority and is administered by the electricity utility companies.
Objectives and intended impacts or benefits of the policy or action	The intended impact(s) or benefit(s) the policy or action intends to achieve (e.g., the purpose stated in the legislation or regulation), including specific goals for GHG emission reductions and sustainable development impacts where available	The policy is intended to increase deployment of solar energy, deepen solar technology penetration, increase access to clean energy, increase energy security, create jobs, reduce greenhouse gas emissions, and create an enabling environment for technology penetration, investment, installation, capacity building, research and development in the solar energy sector. The policy has set the following goals: 1) Annual emission reductions of 20 Million tCO ₂ e by 2022, 2) 200,000 new green jobs (e.g., in solar PV installation and maintenance sectors) created by 2022
Level of the policy or action	The level of implementation, such as national level, subnational level, city level, sector level or project level	National
Geographic coverage	The jurisdiction or geographic area where the policy or action is implemented or enforced, which may be more limited than all the jurisdictions where the policy or action has an impact	National
Sectors targeted	Which sectors and subsectors are targeted	Energy supply, grid-connected solar PV
Other related policies or actions	Other policies or actions that may interact with the policy or action assessed	The Government targets installation of 100 GW of solar power by 2022 of which 40 GW is to be achieved through rooftop solar power plants through the solar PV policy.
Reference	Include a link or full reference to access further, detailed information about the policy or action	www.solarpvpolicy.org

5.1 Describe the policy: exercise

TITLE OF THE POLICY:			
<u>Type of policy:</u>	<u>Description of specific intervention:</u>	<u>Status of the policy:</u>	<u>Date of implementation:</u>
<u>Date of completion:</u>	<u>Implementing entities:</u>	<u>Objectives and intended impacts:</u>	<u>Level of the policy:</u>
<u>Geographic coverage:</u>	<u>Sectors targeted:</u>	<u>Other related policies:</u>	<u>Reference:</u>

6.1 Characteristics of transformational impact: outcomes

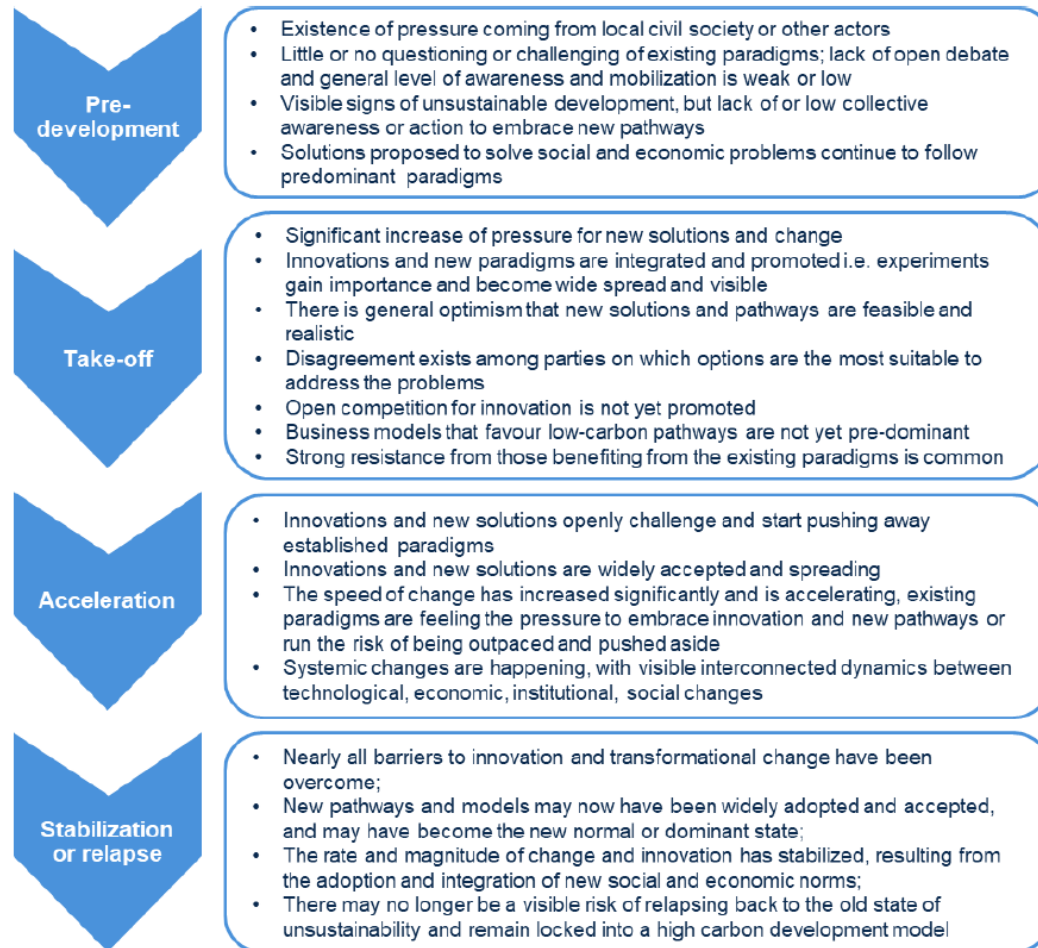
Category	Characteristics	Description of outcome characteristics
Scale of outcome	Macro level	GHG outcome is large in magnitude at international / global level Sustainable development outcome is net positive in magnitude at international/global levels
	Medium level	GHG outcome is large in magnitude at national or sectoral levels Sustainable development outcome is net positive in magnitude at national or sectoral levels
	Micro level	GHG outcome is large in magnitude at subnational, subsector, city or local levels Sustainable development outcome is net positive in magnitude at subnational, subsector, city or local levels
Outcome sustained over time	Long-term	GHG outcome is achieved and sustained ≥ 15 years from the starting situation Sustainable development outcome is achieved and sustained ≥ 15 years from the starting situation
	Medium-term	GHG outcome is achieved and sustained ≥ 5 years and < 15 years from the starting situation Sustainable development outcome is achieved and sustained ≥ 5 and < 15 years from the starting situation
	Short-term	GHG outcome is achieved and sustained < 5 years from the starting situation Sustainable development outcome is achieved and sustained < 5 years from the starting situation

6.1 Characteristics of transformational impact: processes

Category	Characteristics	Description of characteristics
Technology	Research and development (R&D): Policy or action supports R&D for building technological capabilities favouring a low carbon economy	Technological research and development happens through supporting science, innovation, specialization and learning. Investment in R&D, development of the knowledge/skill base, research networks and consortiums, capacity building efforts, and experimentation are examples of activities supporting technological development.
	Adoption: Policy or action leads to early adoption of promising low carbon technologies	Technology adoption can be facilitated by pilot projects, demonstrations, experimentation, publicly or privately funded trials of low carbon technologies. This helps in assessing the market for new technologies, developing skills and capacities to use them, and building networks to support new solutions. It can be understood as the initial phase when an entity first gains knowledge of, develops an understanding or opinion about, experiments with or rejects an innovation.
	Scale up: Policy or action supports scale up and diffusion of low carbon innovations	Technology scale up can be facilitated by replication, diffusion through public-private sector networks, training workshops, business forums and applying innovative ways to conduct business and deliver products and services at a larger, more widespread scale.
Agents	Entrepreneurs: Policy or action promotes entrepreneurs, businesses and investors to catalyze transformational change	Actors, such as entrepreneurs innovating and experimenting with new technologies and applications, businesses forming markets, and investors bringing resources to clean technology, are all key agents of change that the policy can support to drive change. Entrepreneurship can be supported by policy or actions by providing an enabling environment to take initiative and risk and by facilitating exchange of information and ideas.
	Coalitions of advocates: Policy or action supports coalitions and networks that seek to broaden and deepen support for low carbon development	The agency of a wide range of stakeholders including those that can provide checks and balances to those representing entrenched interests can be exercised through political mobilization, coalitions, lobbying strategies and engagement in advocacy. New networks of various types of actors, for example, the labour and environmental movements, private-public actors, political and civil society organizations, may come together because of the way the policy was designed.
	Beneficiaries: Policy or action supports diverse groups of society affected by the transformational change which subsequently support the policy	Beneficiaries include those who benefit directly from the policy or action (e.g., solar producers) as well as those who are compensated if the policy has adverse effects (e.g., workers employed in the coal industry that lose their jobs). Beneficiaries can serve as agents of change and play a role in ensuring the policy or action is durable and strengthened over time.

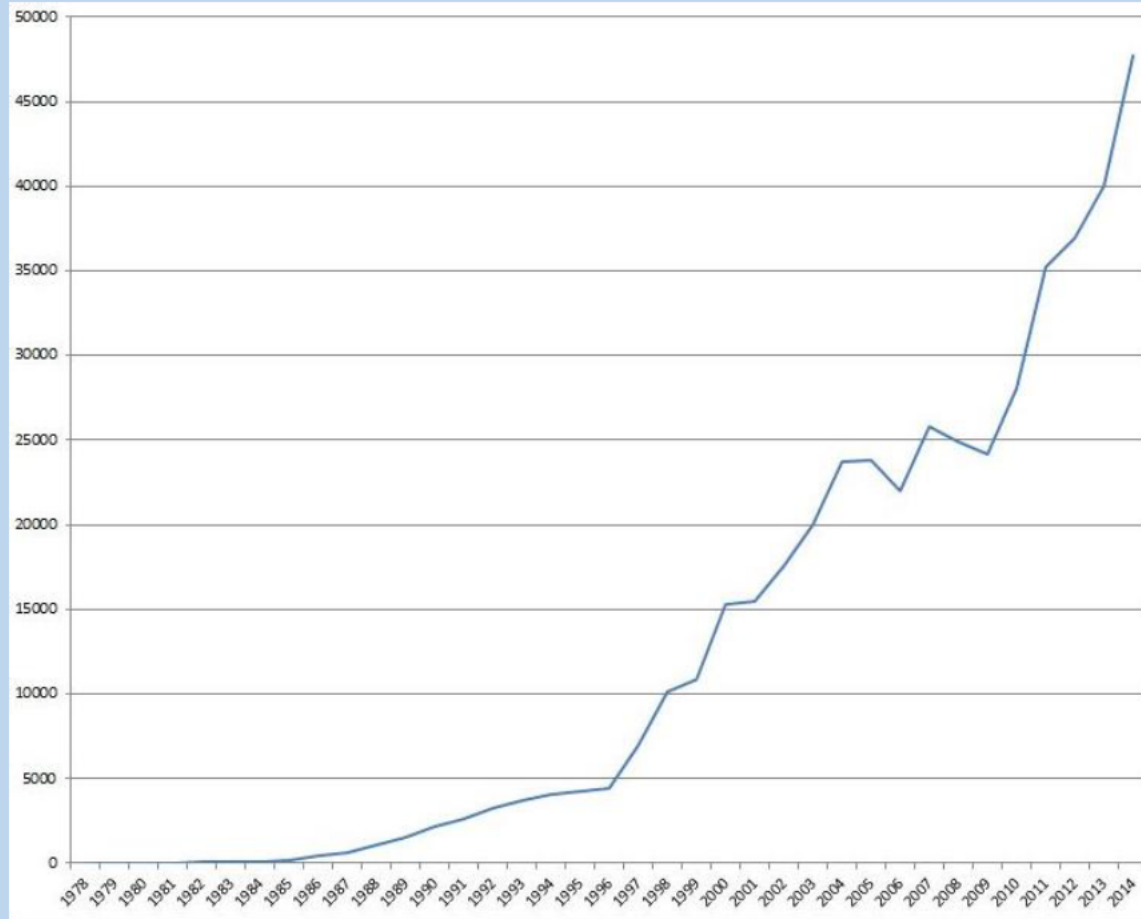
Incentives	Economic and non-economic: Policy or action utilizes fiscal and non-monetary incentives to shift technology and increase market penetration	Economic incentives include tariff structures, access to low-cost finance, feed in tariff policies for renewable energy, value added tax (VAT) exemption, import duty exemptions on new technology, and lowered land rates on renewable energy projects. Non-economic incentives include partnerships, giving ownership to local initiatives and communities, long-term institutional and governance support, political support, signing MOUs, and removal of bureaucratic procedures.
	Disincentives: Policy or action de-incentivizes technologies and businesses contributing to a high-carbon economy	Disincentives include taxes on carbon-intensive products, the use of market-based instruments such as import duties, tariff structure discouraging investments in business-as-usual technologies, reduce/phase out fossil fuel subsidies and increase/introduce fossil fuel taxes.
	Institutional and regulatory: Policy or action creates or re-configures existing conditions, including availability of finance for implementation, and putting place regulation and institutions favouring low carbon development	The policy or action leads to a fertile ground for further institutional or regulatory change by the government; for example, the climate policy may lead to the creation of formal and informal institutions, or new regulation over time, or may create steady budgetary allocation toward policy implementation.
Norms	Awareness: Policy or action supports awareness raising and education for sustainability transition	This includes raising awareness to enhance the level of support for low carbon solutions to affect a change in norms and behaviour among diverse groups of stakeholders. Examples include awareness campaigns and sensitization of policy makers and consumers, e.g., to inform policymakers about falling prices of renewable energy technologies or for consumers to easily identify more efficient appliances through labelling programs, addressing barriers to adopting new behaviours, disseminating information at various levels of governance, and utilizing local organizations and media to spread information.
	Behaviour: Policy or action supports measures that discourage high-carbon lifestyle and practices and promote low carbon solutions	Examples of measures focused on influencing consumer behaviour include peak energy savings, credit by utilities, cash incentives for using alternate transport, congestion charges for driving in certain areas during busy hours or rewarding recycling or use of public transport.
	Social norms: Policy or action affects norms within society that align with and further promote low carbon, sustainable development	Social norms refer to cultural rules of behaviour that are considered acceptable in a society. As awareness increases and behaviour changes, societal norms change. Policy or action contributes to low carbon lifestyle becoming the prevalent societal norm, which reflects broad and deeply entrenched support within the society. Such impacts may change how natural resources are valued, encourage willingness to pay for pollution, or influence social norms related to household energy consumption or sustainable behavior in general.

6.2 Phase of the transformation: details



6.2 Phase of the transformation: example

Figure: Rise of wind power in Denmark

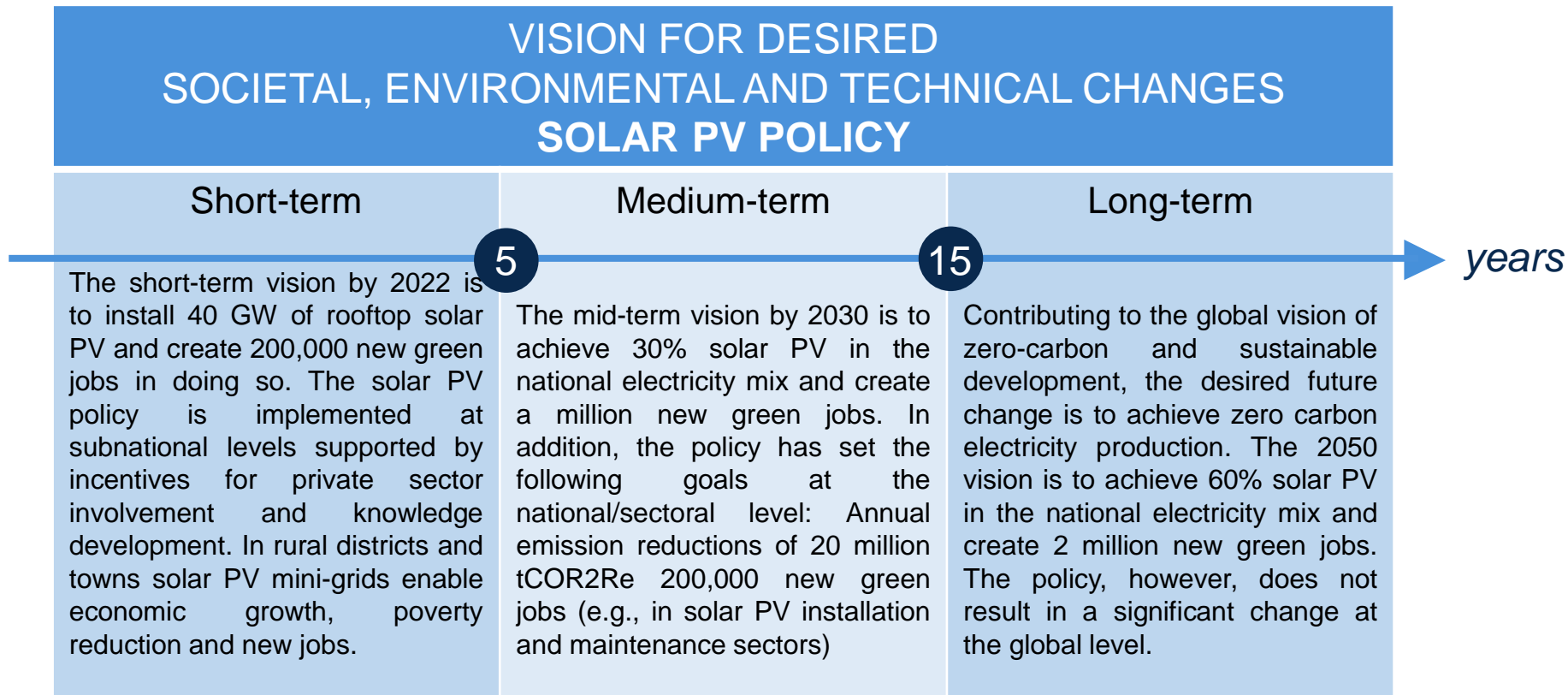


Source: Pedersen, B.G: 'Wind of change: Transformational change through wind power in Danish electricity production, moving towards 100% renewable energy by 2050' in Olsen and Fenhann, 2015.

The *Acceleration Phase* for wind power development in Denmark started in the 1990's and is still ongoing. Broad societal acceptance and favorable political interest followed by legal interventions and economic subsidies characterize the acceleration phase. Wind turbines supplied 39% of the total electricity demand in Denmark in 2014. Increasingly, wind power in Denmark is replacing fossil-fuel based electricity production.

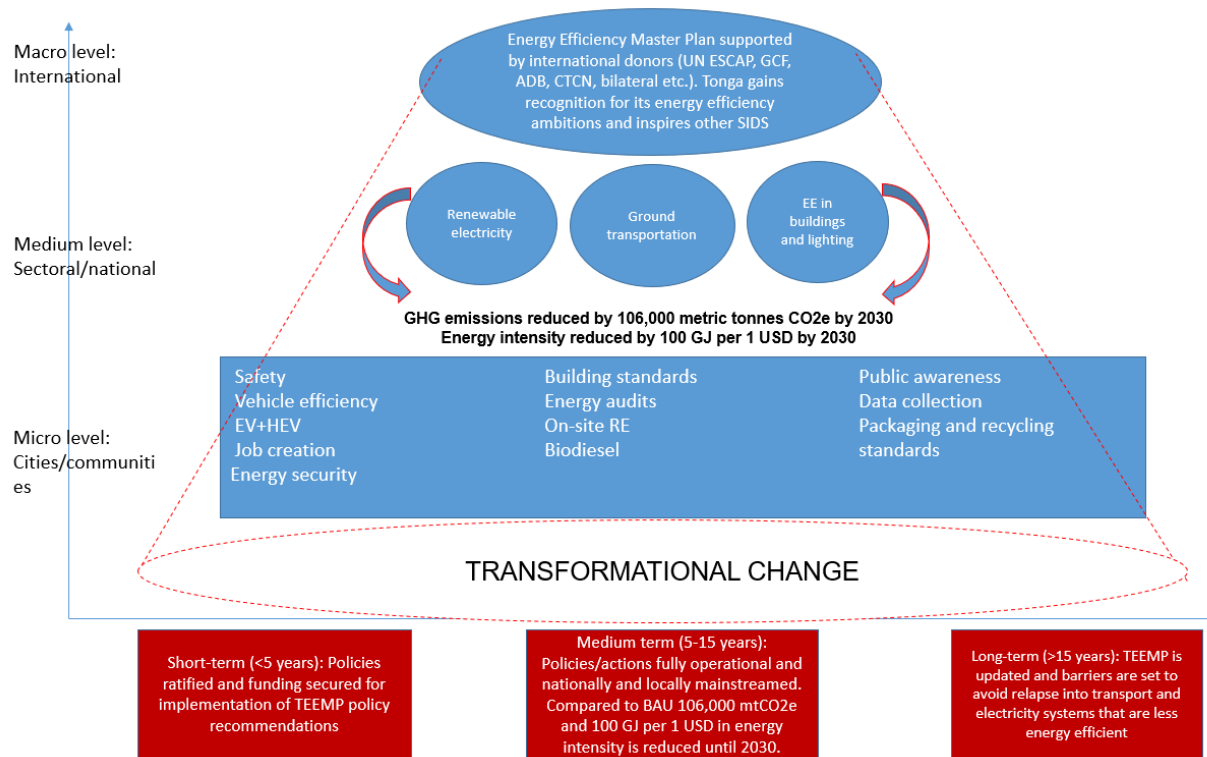
The *Stabilisation Phase* is expected to be achieved by 2050 when the Danish electricity production system is projected to become zero-carbon.

6.3 Vision for transformational change: example



Insights from Tonga

- The assessment of Tonga's Energy Efficiency Master Plan outlines its encompassing vision in graphical form:



See Section 2.2 in: Development of a Tonga Energy Efficiency Master Plan.
(Tabrizi 2019)

6.4 Barriers for transformational change: example

Barriers	Explanation	Characteristics affected	Barrier directly targeted by the policy or action
Lack of popular support and political will to promote a transition	Vested interests in existing coal and oil dependent production actively resist climate policies and regulations. The scale of subsidies to fossil fuels is more significant than those to renewables, and political power is held by those with strong interests in maintaining current subsidy levels.	Economic and non-economic incentives	Yes
Lack of a strategy to discourage fossil fuel based energy	Existing or foreseeable energy strategy dominantly envisages expansion of coal-fired generation capacity and only limited expansion of solar PV. There is a lack of a comprehensive strategy that integrates renewable resources.	Institutional and regulatory changes	No
Limited availability of PV technology	There is very little manufacturing capacity for solar PV components in the country so components need to be imported. Lack of a strong domestic manufacturing industry negatively affects the scale-up of solar PV within the country as it keeps the costs high due to dependence on imports.	Scale up	No
Lack of technical personnel for installation and maintenance	Lack of trained technicians for solar PV installation and maintenance slows down a potential scale-up of PV technology.	Scale up	No
High upfront financial investment needed for solar PV	Lack of financial instruments to support customers in financing solar PV impedes the growth of private market and entrepreneurs in this field.	Entrepreneurs	Yes

6.5 Choose processes characteristics: example

Category	Process Characteristic	Description of characteristic – specific to a policy or action	Relevant/ Possibly relevant/ Not relevant Provide justification
Technology	Research and development (R&D)	No description necessary, since this characteristic is not relevant	Not relevant Solar R&D is not lacking in investment and is not considered an area that is holding back solar PV in the country.
	Adoption	The policy leads to early adoption of solar grid rooftop among residential and commercial consumers.	Relevant Adoption rate for solar grid rooftop is quite low across the country and needs targeted interventions. High capital cost of rooftop systems and longer pay back periods have discouraged its widespread adoption by small consumers in residential and commercial sectors.
	Scale up	The policy leads to large scale deployment of solar PV rooftop installations as new business models emerge for service and delivery to capitalize on the policy incentives and preferential tariff.	Relevant Several barriers exist to large scale deployment of rooftop PV. Solar rooftop has a negligible share in the solar energy sector. There is a huge amount of untapped potential in the solar rich country. Several barriers exist to large scale deployment of rooftop PV (e.g., lack of manufacturing facilities and high skilled workforce, high upfront cost).
Agents	Entrepreneurs	The policy directly engages entrepreneurs, businesses and investors through financial subsidy and feed-in tariff.	Relevant These are some of the most important change agents for the solar PV policy in the country. There is acknowledgement that solar sector should be able to attract private investment and lending to sustain interest from businesses and entrepreneurs and continue to grow. The government has also commissioned a study on how to create an attractive financial environment to attract large scale investment in the sector.
	Coalitions of advocates	The policy indirectly provides a fertile ground for coalitions and networks of stakeholders to engage towards a common goal of increased solar uptake.	Possibly relevant It is not clear whether this is an important constituency to catalyze transformational change in solar PV in the country. Business associations and think tanks are active in convening stakeholders and policymakers and providing a forum to discuss issues related to renewable energy.
	Beneficiaries	No description necessary since this characteristic is not relevant.	Not relevant The political context in the country makes beneficiaries an ineffective group that plays no role in scale-up.

Incentives	Economic and non-economic	The policy utilizes financial incentives to catalyze growth in the solar sector.	Relevant Financial subsidy and feed-in tariff are key ways to increase technology penetration and promote grid-connected solar rooftop uptake. Other economic and non-economic incentives exist to encourage uptake of off-grid solar and large solar power plants, as well as other forms of renewable energy (e.g., wind and biomass).
	Disincentives	The policy does not employ disincentives for carbon-intensive energy generation.	Possibly relevant The assessment is limited to the solar PV sector and it is not clear whether disincentives applied to fossil fuels will be strong enough to cause any impact in the solar PV sector.
	Institutional and regulatory	The policy leads to the formation of new agencies, institutions, and regulations at subnational level.	Relevant Development of new agencies is needed at sub-national levels to further promote solar in states. While there is a dedicated agency at the national level to promote renewable energy, there is no such counterpart in states and a robust institutional set up to design and implement measures and build capacity at all levels does not exist yet.
Norms	Awareness	No description necessary since this characteristic is not relevant	Not relevant There is a high level of awareness in the country and this is not considered a hindering factor.
	Behaviour	The solar PV policy affects the behaviour of residential and commercial consumers to opt for solar PV.	Relevant Awareness has not led to change in behavior possibly due to factors related to financing and upfront costs and it is in an area that needs more attention.
	Social norms	The solar PV policy may have an influence on societal attitudes in favour of rooftop PV technologies.	Possibly relevant Societal norms favor less carbon intensive lifestyle in general and it is not clear whether norms are holding back solar PV. There is a greater push for green, clean living in urban centers as pollution increases and environmental resources are depleted.

6.5 Choose outcomes characteristics: example

Category	Outcome characteristic	Description – specific to a policy or action, including status at the beginning of the assessment period
Scale of outcome – GHGs	Macro level: GHG outcome is large in magnitude at international/global level	This level is outside the assessment boundary. No description necessary.
	Medium level: GHG outcome is large in magnitude at national or sectoral levels	The policy has set a goal of annual emission reductions of 20 million tCOR ₂ Re nationally. Solar PV has a 5% share in the national electricity mix in 2016.
	Micro level: GHG outcome is large in magnitude at subnational, subsector, city or local levels	The solar PV policy is implemented at subnational levels supported by incentives for private sector involvement and knowledge development. In two Northern rural provinces of the country solar PV contributes 20% of the electricity mix in 2016.
Scale of outcome – Sustainable development	Macro level: Sustainable development outcome is net positive in magnitude at international/global level	This level is outside the assessment boundary. No description necessary.
	Medium level: Sustainable development outcome is net positive in magnitude at national or sectoral levels	Solar PV policy aims to create 200,000 new green jobs in the sector (e.g., in solar PV installation and maintenance) by 2022 and up to 2 million new jobs by 2050. There are currently 10,000 jobs in the solar PV sector nationally.
	Micro level: Sustainable development outcome is net positive in magnitude at subnational, subsector, city or local levels	In rural districts and towns new jobs are created through installation and operation of solar PV mini-grids. In the two Northern provinces there are about 600 jobs each in the solar PV industry.

Outcome sustained over time GHGs	–	Long term: GHG outcome is achieved and sustained ≥15 years from the starting situation	The period is longer than the assessment period. No description necessary.
		Medium term: GHG outcome is achieved and sustained ≥5 years and <15 years from the starting situation	Solar PV policy aims to achieve its mid-term (2030) vision of 30% solar PV in the national electricity mix, and sustain the trend of growing share of solar PV in the country. Currently solar PV has 5% share in national electricity mix. It is a new policy and enough time has not passed to
			clearly show that the policy impacts are sustained.
		Short-term: GHG outcome is achieved and sustained <5 years from the starting situation	The policy is targeting to install 40 GW of rooftop solar PV by 2022 and trigger increased emission reductions over the assessment period. There are no clear indications so far that the policy impacts are going to be sustained.
Outcome sustained over time Sustainable development	–	Long term: Sustainable development outcome is achieved and sustained ≥15 years from the starting situation	The period is longer than the assessment period. No description necessary.
		Medium term: Sustainable development outcome is achieved and sustained ≥5 years and <15 years from the starting situation	The solar PV policy aims to achieve its mid-term (2030) vision of a million new green jobs and sustain the trend of increasing jobs in the country. It is too early to see signs of sustained job growth.
		Short-term: Sustainable development outcome is achieved and sustained <5 years from the starting situation	The solar PV policy aims to achieve its short-term goal of 200,000 new green jobs in solar PV installation and maintenance sectors. There is no evidence yet that the policy's impact on jobs is sustained though it is expected to show an upward trend with rise in share of solar PV.