UNFCCC TT: Clear Mechanism

-Summary report-

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The document has been prepared in the framework of the project " Macedonia's Fourth National Communication and Third Biennial Update Report on Climate Change under the UNFCCC", which is implemented with technical and financial support from the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF).

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Abbreviations

BUR	Biennial Update Report
CTCN	Climate Technology Centre and Network
DTU	Danish Technical University
EGTT	Expert Group on Technology Transfer
FTA	Fast Technical Assistance
GCF	Green Climate Fund
GEF	Global Environment Facility
LPAA	Lima-Paris Action Agenda
NAMA	Nationally Appropriate Mitigation Plan
NAP	National Adaptation Plan
NAZCA	Non-state Actor Zone for Climate Action
NC	National Communication
NDE	National Designated Entity
NGO	Non-Governmental Organisation
TA	Technical Assistance
TAP	Technology Action Plan
TEC	Technology Executive Committee
TT	Technology Transfer
UK	United Kingdom
UN	United Nations
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

CHAPTER 1:

Overview of the project

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1.1 Introduction

Climate technologies are the technologies that we use to address climate change. Climate technologies that help us reduce greenhouse gas emissions include renewable energies such as wind energy, solar power and hydropower. To adapt to the adverse effects of climate change, we use climate technologies such as drought-resistant crops, early warning systems and sea walls. There are also 'soft' climate technologies, such as energy-efficient practices or training for using equipment.

The United Nations Framework Convention on Climate Change (UNFCCC) is an international environmental treaty adopted on 9 May 1992 and opened for signature at the Earth Summit in Rio de Janeiro from 3 to 14 June 1992. It then entered into force on 21 March 1994, after a sufficient number of countries had ratified it. The UNFCCC objective is to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system".[1]

This report is part of the project 00110592 "Macedonia's Fourth National Communication and Third Biennial Update Report on Climate Change under the UNFCCC" and serves as an initial document summing up the main principles of the UNFCCC TT: Clear Mechanism. The aim of this report is to analyze the program and its features, as well as to investigate the process of utilization of the Technology Mechanism at a country level, in order to provide initial recommendations and guides its utilization in the Republic of North Macedonia.

The report is structured in four chapters. The first chapter is introductory and provides the overview of the program and the structure of the relevant bodies that are in-charge for this area. The second chapter analyses the possibilities, benefits and requirements for using the TT Clear Mechanism. In the third chapter, the institutions from different sectors of the Macedonian society are examined and the most suitable institutions for nominating as National Designated Entity are proposed. The last chapter briefly concludes this report.

[1] The United Nations Framework Convention on Climate Change. Retrieved 23 May 2016, https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf

1.2 UN climate change initiative – short history overview

UN recognized the importance of the development and transferring of the climate technologies as essential element for facing with the pressing issues related to climate change, greenhouse gas emissions and global warming. When the UNFCCC Convention was established, specific provisions on technology were included which served as a base for all efforts related to the climate and environmentally sound technologies.

During the first stage, prior to the year 1995, the countries initially focused on developing a shared understanding of climate technology issues at the global level. They also explored the available information about the technologies and considered initial possibilities for adapting them for addressing the climate change. From 1997 to 2001, countries engaged in a consultative process on climate technology development and transfer at all levels.

During the second stage (2001-2007), the technology transfer framework and the expert group on technology transfer (EGTT) were established. The following 5 key technology themes are included in the technology transfer framework:

- Technology needs and needs assessments;
- Technology information;
- Enabling environments for technology transfer;
- Capacity-building for technology transfer; and
- Mechanisms for technology transfer.

In 2007, countries added four sub-themes to the mechanisms theme: innovative financing; international cooperation; endogenous development of technologies; and collaborative research and development. This period, the technology needs assessment on a country level was established and consolidated. Through this process, the developing countries identify their technology needs, while the EGTT explores how technology financing and capacity-building could help countries address their needs.

In 2010, the technology mechanism was established and the EGTT's mandate ended. The technology transfer framework was further implemented by Technology Executive Committee (TEC). Also, since 2008, the Global Environment Facility (GEF) has supported climate technology activities under the Poznan strategic program on technology transfer. This program aims to scale up the level of investment for technology transfer thus helping developing countries to address their needs for climate technologies.

With the establishing of the Technology Mechanism in 2010, the efforts on climate technology were scaled-up. The Technology Mechanism is consisted of two complementary

bodies: the Technology Executive Committee (TEC) and the Climate Technology Centre and Network (CTCN).

Agreed by countries in Paris in 2015, the ground-breaking Paris Agreement paves the way for a new chapter in global action on climate change. It also sets the stage for urgently needed climate technology development and transfer. In addition to this, in Paris countries also strengthened the Technology Mechanism, requesting further work on technology research, development and demonstration, as well as on endogenous capacities and technologies. Furthermore, the Paris Agreement established a technology framework to provide overarching guidance to the Technology Mechanism. Together, the Technology Mechanism and the technology framework will support countries to limit the rise in global temperature and adapt to climate change.

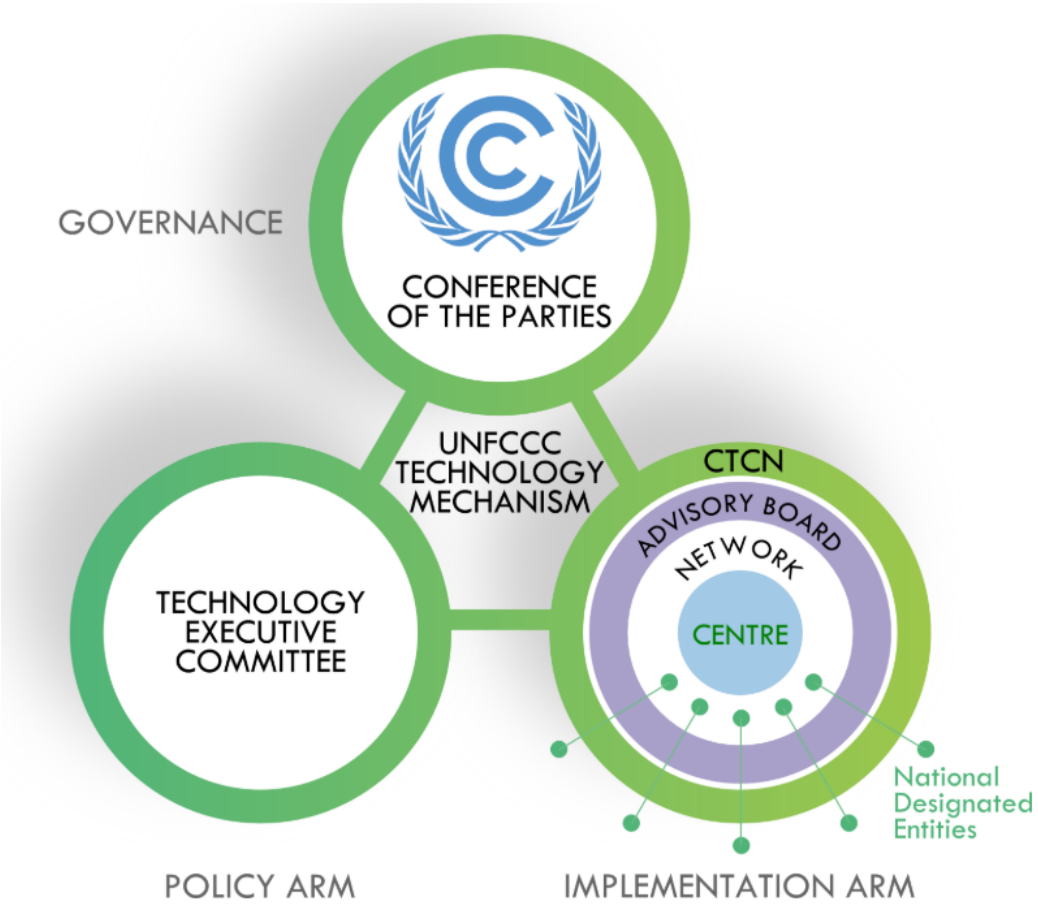
1.3 UNFCCC Technology Mechanism and its web platform

The UN's climate and technology website, TT:CLEAR, which was established in 2001, has a long history in facilitating the development and transfer of climate technologies. Today it serves as a web platform for climate technology, it provides information on the Technology Mechanism, the Technology Executive Committee and Technology Needs Assessments, as well as technology projects from around the world, connections to the community and virtual participation to various climate-related events via the CTCN.

The web platform is consisted of three components:

- Info on the technology mechanisms;
- Technology executive committee;
- Technology needs assessment.

In addition to this, for fulfilling the connectivity needs and linking the technology climate solutions, the Climate Technology Center and Network (CRCN) is established. The CRCN, together with the Technology Executive Committee is part of the Technology Mechanism, which was promoted in 2010 as a practice for enhancing technology development and transfer to developing countries.



The Technology Executive Committee and the Climate Technology Centre and Network work together to enhance climate technology activities. Their functions are complementary and support developing country efforts to address both policy and implementation aspects of climate technology development and transfer.

1.3.1 Technology Executive Committee

The **Technology Executive Committee** is the Technology Mechanism's policy body. It analyses issues and provides policy recommendations that support country efforts to enhance climate technology development and transfer. The committee consists of 20 technology experts representing both developed and developing countries. It meets several times a year and holds climate technology events that support efforts to address key technology policy issues. Since its inception in 2010, the TEC has undertaken work on key areas of climate technology development and transfer. These include: climate technology financing; enabling environments and barriers; national systems of innovation; research, development and demonstration of technology; technologies for adaptation; technologies for mitigation;

technology needs assessments; technology road maps; and strategic and emerging issues. The functions of the TEC are:

- Provide an overview of countries' climate technology needs;
- Analyse policy and technical issues related to climate technology development and transfer;
- Recommend actions to promote climate technology development and transfer;
- Recommend guidance on climate technology policies and programmes;
- Promote and facilitate collaboration between climate technology stakeholders;
- Recommend actions to address barriers to climate technology development and transfer;
- Seek cooperation with stakeholders and promote coherence across technology activities;
- Catalyse the development and use of climate technology road maps and action plans.

1.3.2 Climate Technology Centre and Network

The **Climate Technology Centre and Network** is the implementation body of the Technology Mechanism. The centre is hosted by the UN Environment in collaboration with the United Nations Industrial Development Organization, and is supported by 11 partner institutions. It also has a network of national, regional, sectoral and international organizations which support it to undertake its services. The CTCN is accountable to and guided by the Conference of the Parties through an advisory board. Developing countries may send a request to the centre through their national focal point, called a national designated entity. It accelerates the development and transfer of technologies through three services:

- Providing technical assistance at the request of developing countries on technology issues
- Creating access to information and knowledge on climate technologies
- Fostering collaboration among climate technology stakeholders via its network of regional and sectoral experts

1.3.2.1 Technical assistance

The CTCN provides free technical assistance to developing countries on climate technology issues. Developing countries may send a request to the CTCN via their nationally selected focal point, called a national designated entity (NDE). Upon receiving the request, the Climate Technology Centre quickly mobilizes its global network of experts to design and deliver a solution tailored to local needs.

The CTCN does not provide funding directly to countries, but instead supports the provision of technical assistance provided by experts on specific climate technology sectors.

The CTCN delivers five main types of technical support on climate technologies:

- Technical assessments, including technical expertise and recommendations related to specific technology needs, identification of technologies, technology barriers, technology efficiency, as well as piloting and deployment of technologies;
- Technical support for policy and planning documents, include strategies and policies, roadmaps and action plans, regulations and legal measures;
- Trainings;
- Tools and methodologies; and
- Implementation plans.

The technical assistance is provided:

- To developing countries at the request of their NDEs
- Free of charge (with a value up to 250,000 USD)
- At local, national or regional levels
- To academic, public, NGO, or private sector entities
- For a broad range of adaptation and mitigation technologies
- At all stages of the technology cycle: from identification of climate technology needs; policy assessment; selection and piloting of technological solutions; to assistance that supports technology customization and widespread deployment.

In addition to the technical assistance request described above, the CTCN is providing Fast Technical Assistance (FTA) which consists of a short time response (up to 2 months) with a limited value of 15,000 USD, and referring to technology prioritisation, endogenous technologies assessment, policies and measures that are immediate priorities for the requesting country.

1.3.2.2 Access to information

The CTCN's online knowledge portal, at <www.ctc-n.org>, serves as a gateway to the CTCN's

technical assistance and capacity-building services. It also serves as a library of climate technology information and tools, organized by geographical region and technology sector, which is made available through an open-source database. In addition, the CTCN provides training and support to strengthen developing country capacity to identify technology options, make technology choices and operate, maintain and adapt technologies.

Although the CTCN provides technical assistance rather than direct funding to countries, in some cases the CTCN can help to play a matchmaking role with funding sources.

1.3.2.3 Scaling up international collaboration

Membership of the Climate Technology Network provides access to a diverse global community of climate technology users, national decision makers and financiers, under the umbrella of the Technology Mechanism. The Climate Technology Network comprises

academic, civil society, finance, private sector, public sector and research entities, as well as over 130 CTCN national focal points (NDEs). Network members gain the opportunity to bid for the delivery of CTCN technical assistance and to showcase relevant experience, reports and technologies. The membership of the network is costfree and they actively seek Network members from all geographic regions with an array of sector experience. The institution that is willing to join the network should fulfil the following membership criteria:

1. Belong to one of the following institutional structures: national technology centre or institution; regional climate technology centre or network; intergovernmental, international, regional or sector organization, partnership or initiative that contributes to technology deployment and transfer; or research, academic, financial, non-governmental, private sector or public sector organization, partnership or initiative. NDEs are de facto members of the CTN.
2. Demonstrate capability in initiatives aimed at development, transfer and deployment of climate technologies applicable for developing countries including expertise in policy, capacity building and/or investment.
3. Prove operational and organizational stability, as evidenced by financial, human and other resources relative to their mandate and size that could reasonably be deemed sufficient to deliver the organization's mandate.
4. Provide a pledge to comply with the CTN code of Conduct.

In general, there are three types of network activities:

- Technical services: Providing technical assistance funded by the CTCN in response to developing country requests (selection conducted through a competitive bidding process among Network members);
- Information exchange: Sharing/receiving information (data, lessons learned, reports, case studies) at CTCN events and via the CTCN's online knowledge platform;
- Capacity building: Presenting online and in-person tutorials and workshops on your fields of expertise to peers and developing country stakeholders.

The members might have three types of benefits from their membership in the network: (1) commercial opportunities (pre-qualified access to competitive bidding for delivery of CTCN technical assistance services to developing countries); (2) connection (networking with national decision makers, thought leaders, and other network members for expanding the partnership opportunities and learning about emerging activities and areas of practice); and (3) visibility (increasing the global recognition and showcase the member's experience and success stories, as well as broadening the member's global reach by engaging in new technology projects and showcasing relevant experience, events, reports and tools).

CHAPTER 2:
Analyses of the possibilities, benefits, requirement of using TT Clear - Mechanism

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2.1 Overview of the possibilities for support of the developing countries

The aim of the UNFCCC convention is development and transferring the technologies for climate change to developing countries. The following support mechanisms are available:

- Technology Needs Assessments
- Technical Assistance
- Fast Technical Assistance
- Technical Examination Process
- Policy options
    - Thematic areas: renewable energy; energy efficiency; land use; non-CO2 GHGs; carbon capture; urban environment; transport; value of carbon.
    - Policy instruments: policy support and frameworks; economic and fiscal instruments; regulatory instruments; research and development; voluntary approaches; other.

The Technology Needs Assessment process and the other processes for technical assistance will be explained in greater details in the next subsections of this chapter.

The technical examination process explores high-potential mitigation policies, practices and technologies with significant sustainable development co-benefits that could increase the mitigation ambition of pre-2020 climate action.

The technical examination process consists of regular in-session thematic technical expert meetings and focused follow up work to be conducted by Parties, international organizations and partnerships throughout the year. Parties to the Convention resolved to start this process in 2014 and to further accelerate it by 2020 in order to implement scalable best practice policies and bridge the ambition gap.

The policy options represent one of the key outcomes of the technical examination process and highlight replicable and scalable good practices, approaches and technologies with significant mitigation potential, which could be tapped in the period up to 2020 in many countries across the world.

The policy options cover climate actions undertaken by national governments and communicated to the UNFCCC in the submissions from Parties and observer organizations. These climate actions complement the commitments highlighted in the NAZCA portal, which registers climate action by companies, cities, subnational regions, and investors. Additionally, the policy options complement the work under the Lima-Paris Action Agenda (LPAA) that showcases transformational initiatives, which accelerate ambition in 2015 and beyond.

In addition to the services provided via the Technical Mechanism, the UNFCCC also provides certain financial support through the UNFCCC Financial Mechanism. It facilitates the provision of financial resources to developing countries through its two operating entities, the Global Environment Facility (GEF) and the Green Climate Fund (GCF). The GEF currently provides support to climate technology activities through its Poznan strategic programme on technology transfer. Many of the climate projects and programmes that the GCF supports also have technology elements.

To ensure coherent support for and enhance the provision of climate technology financing, the Technology Executive Committee (TEC), the Climate Technology Centre and Network (CTCN), the GCF and the GEF, are working to further elaborate linkages between the Technology Mechanism and the Finance Mechanism.

The outputs of the assessments conducted on a national level are the National Plans. Examples of activities for development of national plans are: Nationally Determined Contributions (NDC's), Technical Needs Assessments (TNA's), National Adaptation Plans (NAP's), Nationally Appropriate Mitigation Action (NAMA's), etc.

In general, there are two supported types of activities: adaptation and mitigation. For each of these types, the specific technology sectors are listed below:

- Adaptation: Agriculture and forestry; coastal zones; early warning and environmental assessment; human health; infrastructure and urban planning; marine and fisheries; water.
- Mitigation: agriculture, carbon fixation and abatement; energy efficiency; forestry; industry; renewable energy; transport; waste management.

From the thematic viewpoint, the following themes for enablers and approaches are offered:

- Cross-sectoral enablers: capacity building and training; communication and awareness; economics and financial decision-making; governance and planning.
- Cross-cutting approaches: community based; disaster risk reduction; ecosystems and biodiversity; endogenous technologies; gender.

Last but not the least, the capacity building component, which is also part of the technical assistance, consists of:

- CTCN webinars;
- Incubator programme;
- CTCN secondment programme;
- CTCN events;
- Regional forums;
- Climate technology opportunity analytics; and
- CTCN trainings.

2.1.1 Technology Needs Assessments

Technology needs assessments are a long-standing process under the United Nations. Since 2001, more than 80 developing countries have undertaken them to assess their technology needs to address climate change. Since 2009, the Global Environment Facility and UN Environment, with the cooperation of the UN Climate Change secretariat, have supported developing countries to undertake technology needs assessments. These may be separated into three phases. Phase I commenced in 2009 and lasted until 2013, Phase II began in 2015 and continues into the present. Phase III was approved by the Global Environment Fund in 2016 and runs from 2019.

Since 2010, the UNEP Danish Technical University Partnership (DTU) has provided technical and methodological support to developing countries to undertake TNAs. The Global Environment Facility, through its Poznan strategic programme on technology transfer, has provided support for these TNA projects. Between 2010 and 2013, DTU supported 36 developing countries to conduct TNAs. Since late 2014, UNEP DTU has been providing similar support to a second phase of 25 new countries. Preliminary planning is underway to support a third group of more than 20 least developed countries and small island developing states, which was estimated to begin in late 2017 or early 2018.

A key outcome of the TNA process is the technology action plan (TAP). A TAP is a concise plan for the uptake and diffusion of prioritised technologies that will contribute to the country's social, environmental and economic development and climate change mitigation and adaptation. Developing countries are currently seeking support for more than 300 TAPs that they prepared between 2009 and 2013. More TAPs are currently being prepared by 25 countries. The TAP should identify the actions and activities that should be included, by summarizing the barriers and proposing measures for overcoming the barriers. For each measure, specific actions are selected and proposed, accompanied by detailed activities and project ideas. In addition to this, the TAP should identify the stakeholders to implement TAP and determine the timelines. Furthermore, the TAP usually determines the capacities building requirements and provides an estimation of the costs and suggested funding sources. And finally, the last section of the TAP is dedicated to the management planning, including risk analyses and contingency planning.

Preparing a complete and balanced TAP is a step-by-step process that begins with the output of earlier TNA steps. It requires the participation and buy-in of key stakeholders, a clear process for moving forward and methodical commitment by a TAP team (ideally a sectoral or technology-specific working group) to various quantitative and narrative chores. However, by following these steps, one can produce a clearly articulated plan and a specific, convincing request for financial and technical resources to help promote the uptake and/or diffusion of a specific climate technology in the countries.

There are no special requirements or prerequisites that need to be fulfilled in order one country to be granted a TNA support, which means all developing countries may receive support to conduct a TNA.

2.1.2 Technical Assistance

The CTCN provides technical assistance in response to requests submitted by developing countries via their nationally-selected focal points, or National Designated Entities (NDEs). Upon receipt of such requests, the Centre quickly mobilizes its global Network of climate technology experts to design and deliver a customized solution tailored to local needs. The CTCN does not provide funding directly to countries, but instead supports the provision of technical assistance provided by experts on specific climate technology sectors.

To repeat from the previous chapter, the CTCN delivers five main types of technical support on climate technologies:

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2.1.3 Fast Technical Assistance

In addition to the technical assistance request described above, the CTCN is providing Fast Technical Assistance (FTA) which consists of a short time response (up to 2 months) with a

limited value of 15,000 USD, and referring to technology prioritisation, endogenous technologies assessment, policies and measures that are immediate priorities for the requesting country.

The Request Submission Form for the Fast Track Assistance should be completed by the organisation requesting technical assistance from the Climate Technology Centre & Network (CTCN) in collaboration with the National Designated Entity (NDE) of the country in question.

The maximum time for the assignment under Fast Technical Assistance is 2 months, while the maimum time for the assignment under the Technical Assistance is 12 months.

2.2 Outputs of the technical assistance

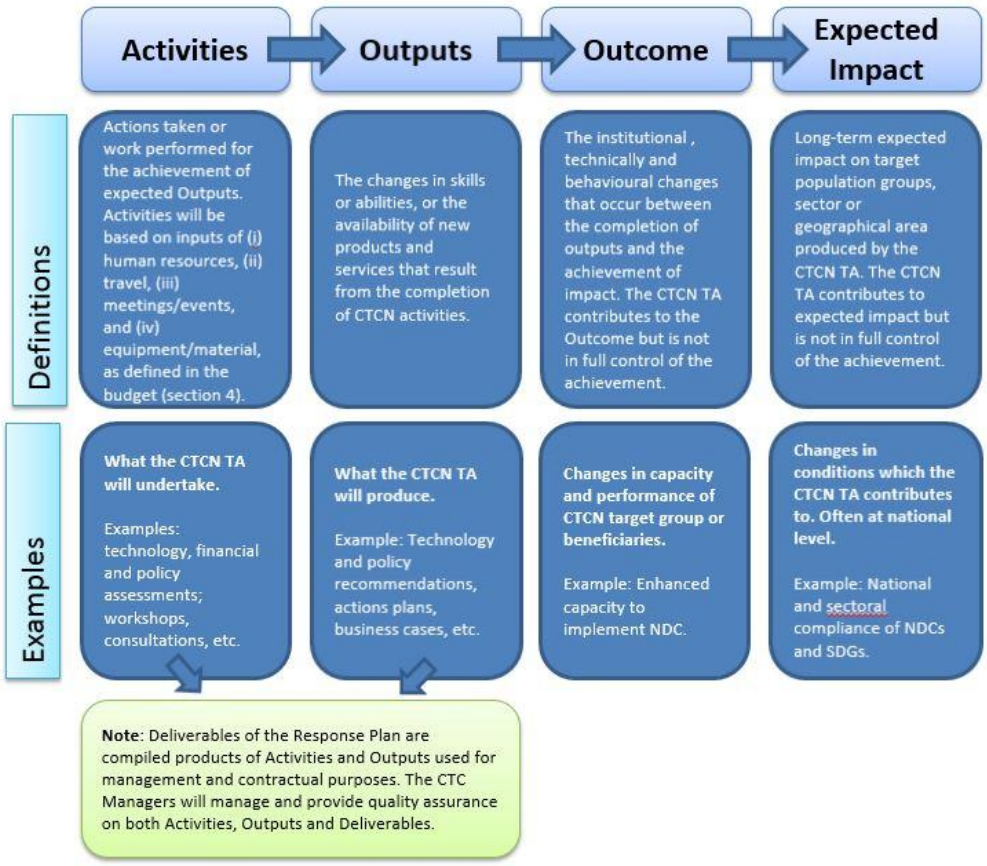
The output of the technical assistance is the technical assistance response plan.

The Response Plan is developed by CTCN specialists in response to a country request for technical assistance. It constitutes the Terms of Reference of the CTCN technical assistance that will be provided to the country and it provides the formulation of and subsequent basis for the monitoring and evaluation of the Response Plan implementation, as well as its expected outcomes and anticipated impacts.

In addition to the sections providing general information on the CTCN technical assistance, such as: short summary, background and problem statement, the Response Plan contains the Logical Framework, the required resources and itemized budget for the proposed activities and outputs, profile of the required experts for the implementation of the CTCN Response Plan, intended contribution to impact over time, relevance to the nationally intended contributions and other national prioritized efforts, linkages to other relevant activities, and anticipated follow-up activities, gender analysis, main in-country stakeholders for implementation, contribution to the most relevant UN sustainable development goals, classification of the required technical assistance and monitoring and evaluation plan for the requested technical assistance.

One of the main sections that should be defined in the CTCN Response Plan is the Results chain and Logical Framework Approach.

The result chain is the causal sequence that stipulates the necessary flow of actions and processes to achieve desired objectives and results – beginning with inputs, moving through activities and outputs, and culminating in individual outcomes. The outcome will contribute to the desired impact in the society. The Logical Framework Approach is an analytical process used to support objectives-oriented project planning and management. It provides a set of pre-defined concepts which are used as part of an iterative process to aid structured and systematic analysis and management of the CTCN technical assistance.



The Response Plan is developed by the **Response Planning Design Team**, which is selected by the Climate Technology Centre (CTC). The composition of the team depends on each particular request but may include the National Designated Entity (NDE), the request Proponent, Climate Technology Manager of the CTCN, experts from the CTCN Consortium, UNIDO and UNEP experts from regional offices and other experts as needed.

The role of CTCN Consortium experts is to lead the design of the Response Plan. The NDE will provide overall guidance on national context and priorities whereas the request Proponent will provide more detailed information on the sector, barriers and requested assistance. The Climate Technology Manager of the CTCN will provide quality assurance of timeliness and appropriateness of the Response Plan.

The Response Planning Design Team will draft all sections of the Response Plan template building on the information contained in the CTCN Request, based on expertise on the given topic and potentially further data collection, as required. This will be done by the CTCN Consortium Experts in consultation with the NDE, request Proponent and relevant stakeholders. The Response Plan has to be agreed to and approved by the NDE and the CTCN Director. This Response Plan will serve as the basis to identify, select and engage an expert institution from the Climate Technology Network or Consortium to lead the implementation of the CTCN Response Plan in the requesting country.

To the extent possible, staff from UNEP and UNIDO Regional, Sub-Regional and/or National Offices should be involve in all stages of formulation of the Response Plan to maximize synergies and avoid overlap with ongoing initiatives, as well as ensure relevance to regional and national context.

The Response Planning process should be completed over a period of up to 60 working days (12 weeks). Indicative steps and related timelines are laid out below:

Upon contracting of the implementing partners to implement this Response Plan, the lead implementer will produce a monitoring and evaluation plan for the technical assistance. The monitoring and evaluation plan must include specific, measurable, achievable, relevant, and time-bound indicators that will be used to monitor and evaluate the timeliness and appropriateness of the implementation. The CTCN Technology Manager responsible for the technical assistance will monitor the timeliness and appropriateness of the Response Plan implementation. Upon completion of all activities and outputs, evaluation forms will be completed by the (i) NDE about overall satisfaction level with the technical assistance service provided; (ii) the Lead Implementer about the knowledge and learning gained through delivery of technical assistance; and (iii) the CTCN Director about timeliness and appropriateness of the delivery of the activities and outputs.

In order to maximize the impact of the technical assistance provided by the CTCN and provide an effective M&E process, the Response Plan should integrate as much as possible the considerations below:

- Climate Technology focus: The Response Plan should have a clear focus on climate technologies, and identify activities that enable the identification, development, deployment or diffusion of one or several specific technologies (including equipment, techniques, knowledge and skills).
- Barrier removal / Problem solving: The activities should contribute to address the specific problem statement identified in the Request. The barriers identified should be those hampering the identification, development, deployment or diffusion of one or several climate technologies or climate actions. Therefore, it may be necessary to limit the CTCN Response Plan to a set of activities for technical assistance commonly agreed with the NDE (and Proponent when needed) compared to the original request submitted. The CTCN will liaise with NDEs and Proponent in case the scope of the technical assistance deviates from the original request.
- Use of the CTCN assistance by stakeholders: The Response Plan should identify clearly how the products of the CTCN assistance will be used in the short term once

support is delivered, by who and when, to ensure it will lead to specific impacts in the country. The activities should engage the stakeholders that will use the concrete results of the assistance to deploy the technologies, including from the private sector, the public sector, research institutions, etc.

- Within the scope of CTCN resources: The cost of the technical assistance provided by the CTCN cannot exceed USD 250,000 per Response Plan. Therefore, it may be necessary to prioritize activities and limit the CTCN Response Plan to a set of priority activities commonly agreed with the Proponent and the NDE to remain under this value. Under section 4 of the Response Plan template, an indicative activity based budget should be presented. The proposed budget is indicative and should present an estimated costing range per activity, output as well as a total costing range for the delivery of the Response Plan. Once the Response Plan is finalised and published for tendering, interested parties will provide competitive offer against the indicative budget.
- CTCN activities and outputs should be linkable to monitoring and evaluation indicators: All proposed activities and outputs must be linkable to monitoring and evaluation indicators that are specific, measurable, achievable, relevant, and time-bound. The monitoring and evaluation process and corresponding indicators will be developed by the Lead Implementer as part of the work plan and will allow the CTCN technology Manager to monitor the timeliness and appropriateness of the implementation.
- Synergies with existing efforts: The Response Plan should focus on activities that are not already being fully supported or that are in the process of being fully supported by another national, regional or international organization. Synergies and complementarity also require that the CTCN assistance is not duplicating past activities. It is possible in the Response Plan to indicate co-financing from the government, the Proponent or another stakeholder, that will maximize the effectiveness of the CTCN assistance.
- Gender mainstreaming: The CTCN mission is to build or strengthen developing countries' capacities to identify technology needs, to facilitate the preparation and implementation of technology projects and strategies taking into account gender considerations. The Response Plan must therefore describe how gender considerations will be included and monitored within the proposed activities, and any gender co-benefits that will be gained as a result of implementing the CTCN technical assistance.

In addition to the technical assistance response plan, for communicating publicly in one synthesis document a summary of progress made and lessons learned under the technical assistance (TA) towards the anticipated impact and compiling TA-specific information required for internal use in donor and UN reporting, the implementers prepare Technical Assistance Closure and Data Collection Report. Once approved by the CTCN Director, the TA Closure report will be a public document available on the CTCN website. The TA Closure report is prepared at the end of the assignment as final deliverable/product. It provides some general information and summarizes in more details all activities, outputs and

products that contribute to the expected impact of the technical assistance, and the lessons learnt. For public use, the TA is illustrated in slides and photos and the information on TA impact description is given. Also, the standardized CTCN indicators that are relevant for the implemented TA are described and quantified.

CHAPTER 3:
Institutional analysis and nomination of the most suitable institution as National Designated Entity under the UNFCCC TT: Clear Mechanism

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3.1 Defining the evaluation criteria and major sectors

The public and private sectors in the country are quite different and it is difficult the same procedure for evaluation the performance to be used in both cases.

The analysis of the current state of the public sector in general reveals the dependence on political changes, the interaction of a great number of actors, the gap between offer and demand, a chronic deficit of financial resources and failure in the efforts to achieve performance (Turlea et al. 2011). The public sector is under the lens in the recent years in respect to its performance. In some countries, the development of measures to manage and evaluate public sector performance has reached a strategic height, therefore tracking of output, outcomes and input have been reasonably straightforward and significant progress is somewhat recorded. However, even in the advanced societies, such as the UK, imposing unified, centralised performance measurement driven approach that will link different levels of public sector hierarchy is quite difficult. The consistency in terms of performance indicators, targets and priorities is relatively low. Significant implications are evident for the design and role of performance targets and indicators, for the possibility to align frameworks at different levels of the public sector, and for the importance of feedback loops in measurement systems (Micheli and Neely 2010).

Administrative reform has led to a strong increase in the use of performance assessment instruments in the public sector. However, this has also led to several unintended consequences, such as the performance paradox, tunnel vision, and "analysis paralysis." These unintended consequences can reduce the quality of the knowledge about actual levels of performance or even negatively affect performance (van Thiel and Leeuw 2016). The same study suggests that performance assessment should take the special characteristics of the public sector into account and develop systems that can handle contested and multiple performance indicators, striking a balance in the degree of "measure pressure" and minimizing dysfunctional effects.

However, in relation to the nomination of the NDE at a country level, it is of a greater importance the assessment of certain specific factors that will be common for both, the public and the private sectors, in order an overall rank list of organisations to be produced, rather than in-depth assessment of the public organisations' performance.

3.1.1 Common evaluation criteria for both sectors

The authors researched the evaluation criteria used in similar contexts for assessing the quality and suitability of public or private institutions. Throughout the literature, it was pointed that every assessment should be developed independently, taking into account all relevant circumstances. The characteristics of both sectors of interest, the public and the private/NGO sector are quite different. Therefore, it was decided for the needs of this initial stage of the assessment, only the most important criteria that are applicable for both sectors to be selected. Further in the process, for more precise determination of the most suitable NDE on a national level, a qualitative methodology consisted of in-depth interviews and focus groups is proposed. This examination will result in development of independent cases for the highest-rated institutions within this stage, which could be proposed as an input to the experts group that will nominate the NDE for the Republic of North Macedonia.

The following criteria are proposed as primary factors that should be researched at this stage:

- Relevance of the main field/sector of operating with the technology sectors (both, hard and soft technology are included)
- Inter-sectoral collaboration
- National coverage
- Experience with policy-making
- Experience with implementing granting schemes
- Experience with working on international projects
- Availability of the personnel and possible motivation for becoming NDE.

The organisations that were chosen for assessment and the elaboration on the primary factors are given in the following sections. For each organisation, a brief summary is given, which part is followed by the assessment of the organisation by each of the selected criteria. The criteria are graded with marks from 1 to 5, where 1 is the weakest/lowest mark and 5 is the highest mark. The received marks are summed up, which results with an overall assessment mark for the examined organisation. The overall marks are ranked and the highest ranked organisations are promoted as organisations that possess significant potential for NDE. In the next phases of this project, further assessment with qualitative research methods (in-depth interviews and focus groups) of the promoted organisations in this first project phase should be conducted. This research will eventually result with selection of the most suitable organisation for NDE that will represent the Republic of North Macedonia in the UNFCCC society and CTCN network and will serve as national focal point for the development and transfer of climate technologies.

3.2 Public sector

Republic of North Macedonia has 16 Ministries and 43 Government bodies which are part of the Ministries. In addition, there are several public institutions that are of interest in this context: the Agency for Youth and Sport, the Fund for Innovation and Technology Development, the Geological Institute, etc. The following units could be suitable for NDE:

- Ministry of Finance
- Ministry of Economy
    - Metrology Bureau
- Ministry of Health
    - State Sanitary and Health Inspectorate
- Ministry of Transport and Communications
    - State Communal Inspectorate
- Ministry of Agriculture, Forestry and Water Economy
    - Directorate for Water Management
    - Directorate for Hydro-Meteorology
    - Directorate for Seeds and Seed Materials
    - Directorate for Protection of Plants
    - State Agricultural Inspectorate
    - State Inspectorate for Forestry and Hunting
- Ministry of Environment and Physical Planning
    - Constituent Body for Environment with offices of:
        - Office of Environment
        - Office Industrial Pollution and Risk Management
    - Department for International Cooperation
    - Department of Sustainable Development and Investment
    - State Environmental Inspectorate
- Ministry of Information Society and Administration
- Ministry of Labour and Social Policy
- Ministry of Education and Science
    - State universities:
        - University “Ss. Cyril and Methodius” in Skopje, Faculties: Faculty of Mechanical Engineering – Skopje, Faculty of Technology and Metallurgy; Faculty of Electrical Engineering and Information Technologies, Center for Technology Transfer and Innovations – INNOFEIT; Faculty of Computer Science and Engineering; Faculty of Natural Sciences and Mathematics.
        - University “St. Clement of Ohrid” in Bitola, Faculties: Faculty for Biotechnical Sciences - Bitola, Technical Faculty – Bitola; Faculty of

Technology and Technical Sciences – Veles; Faculty of Information and Communication Technologies – Bitola.
        - University "Goce Delcev" in Stip, Faculties: Faculty of Agriculture; Faculty of Mechanical Engineering – Stip; Faculty of Electrical Engineering; Faculty of Technology; Faculty of Computer Science; Faculty of Natural and Technical Sciences.
        - University of Tetovo, Faculties: Faculty of Agriculture and Biotechnology; Faculty of Applied Sciences; Faculty of Food Technology and Nutrition; Faculty of Natural Sciences and Mathematics.
    - Public State Institution Hydrobiological Institute – Ohrid
- Ministry of Local Self-Government
    - State Inspectorate for Local Self-Government
    - Bureau for Economically Insufficient Developed Regions
- National Hydrometrological Service of the Republic of North Macedonia
- Fund for Innovation and Technology Development
- Agency for Youth and Sport
- Geological Institute of the Republic of North Macedonia
- Bureau for Regional Development
    - Skopje planning region
    - East planning region
    - South-east planning region
    - North-east planning region
    - Pelagonija planning region
    - Vardar planning region
    - South-west planning region
    - Polog planning region

After the initial analyses of the available information for each organisation, the following organisations are short-listed and further assessed as the most relevant, having the mark for the 'Relevance' criteria '3' or above:

- Ministry of Environment and Physical Planning;
- Department of Sustainable Development and Investment under the Ministry of Environment and Physical Planning;
- Department for International Cooperation under the Ministry of Environment and Physical Planning;
- State Environmental Inspectorate under the Ministry of Environment and Physical Planning;
- Metrology Bureau under the Ministry of Economy;
- Ministry of Agriculture, Forestry and Water Economy;
- Ministry of Education and Science;
- State University "Ss. Cyril and Methodius" – Skopje, Faculty of Mechanical Engineering – Skopje;

- State University “Ss. Cyril and Methodius” – Skopje, Faculty of Computer Science and Engineering;
- State University “Ss. Cyril and Methodius” – Skopje, Faculty of Electrical Engineering and Information Technologies, Center for Technology Transfer and Innovations – INNOFEIT;
- National Hydrometrological Service of the Republic of North Macedonia; and
- Fund for Innovation and Technology Development.

3.3 NGOs and private sector

In addition to the public sector, the sectors of non-governmental organisations (NGOs)/civil society organisations and private sector organisations play significant role in addressing the pressing issues on climate change, raising an awareness and building appropriate human capacities for both, the hard and the soft technology transfer of climate technologies. In general, the organisations from these sectors are more experienced in planning and implementing donor-financed projects and actions and they are more flexible in motivating the employees to engage themselves in the role of NDE with financial and other types of incentives. On the other hand, they possess limited experience and expertise in policy-making in respect to the public organisations, although some of the NGOs are making efforts for lobbying and influencing the polices and measures. The most relevant organisaions from both sectors are selected and further analysed in the following two subsections. The organisations with greater potential for NDE are shortlisted and assessed by each of the selected criteria for examination, which are mutual for both, the public and the private sectors.

3.3.1 NGOs

The sector of NGOs was quite complicated to be analysed, because many of the organisations operate in multiple thematic areas, and not all of them are relevant in this context. In essence, it is difficult to be determined the scope of the activities under the relevant thematic areas of operation. Moreover, the assessment of the financial long-term capability and sustainability of the organisations is also not an easy task to be performed.

Most of the actions for lowering the carbon footprints and greenhouse gas emissions are initiated by the ecologists. On the other hand, the actions for popularisation and raising awareness, as well as the ‘soft climate technologies’, such as gaining skill and competence for new technologies development or technology transfer, are mainly initiated and implemented by NGOs operating in multiple thematic areas. The NGOs with significant potential for NDE from former and latter are listed below:

- Eco-Sense (Еко-Свест https://ekosvest.com.mk/)
- Macedonian Ecological Society (https://mes.org.mk/en/)
- Ajde Makedonija (http://www.ajdemakedonija.mk/ - the website does not work)
- BioEko (they don't have a website)
- Association for the Protection of Nature in Macedonia (https://apnmorg.wixsite.com/info - the website is not fully functional)
- Konekt http://konekt.org.mk/en/
- NCDIEL (National Center for Development of Innovation and Entrepreneurial Learning) https://ncdiel.mk/en/
- Center for Clean Production and Management Skopje (they don't have a website)

Only the NGOs that possess professional and fully functional website are promoted for further analyses, because the online presence is crucial for achieving online visibility and accessibility for the users of the clear mechanism. In this respect, the following NGOs are shortlisted for further assessment:

- Eco-Sense (Еко-Свест https://ekosvest.com.mk/)
- Macedonian Ecological Society (https://mes.org.mk/en/)
- Konekt http://konekt.org.mk/en/
- NCDIEL (National Center for Development of Innovation and Entrepreneurial Learning) https://ncdiel.mk/en/

3.3.2 Private sector

The private sector in the country is characterised with dominance of the small and medium enterprises (more than 99%). The companies operating in thematic areas that are relevant for the selection of the NDE are distributed across most of the industries. Although majority of these companies produce or sell eco-friendly materials, products or services, only tiny share of them conduct the research and development for the novel materials in-house. It is widely known that the SMEs in general, experience lack of capacities (both financial and human capacities) to carry out the research for the innovative products and services. The organisation that will be nominated for NDE should possess certain capacities for research and development, as well as appropriate availability of sufficient human resources. Therefore, it was decided that only the companies whose core area of operation is research and analyses of the ecological topics could be appropriate for nomination in this respect. To our knowledge, only the following two companies from the private sector are the companies that provide ecological consultations and analysis:

- Pharmachem https://www.farmahem.com.mk/?l=eng
- Tehnolab Ltd. http://www.tehnolab.com.mk/

After the initial analyses of the available information, it was noticed that the company Tehnolab does not possess fully functional website. On the other hand, the company Pharmachem, which operates since 1990, with its 40 employees and its experience on the Swiss project "Nature Conservation Programme in North Macedonia" demonstrates its potential for the requested qualities for NDE. This resulted with short-listing of only one company: Pharmachem as the most potential candidate for the NDE from the private sector. This company will be further assessed and evaluated by the selected criteria.

3.4 Evaluation and ranking of the institutions

The shortlisted institutions from the public and private sectors are examined in respect to the following criteria:

- Relevance of the main field/sector of operating with the technology sectors (both, hard and soft technology are included)
- Inter-sectoral collaboration
- National coverage
- Experience with policy-making
- Experience with implementing granting schemes
- Experience with working on international projects
- Availability of the personnel and possible motivation for becoming NDE.

Each organisation is assessed by each of the selected criteria, by grading it with marks from 1 to 5, where 1 is the weakest/lowest mark and 5 is the highest mark. The received marks are summed up, which results with an overall assessment mark for the examined organisation.

Organisation	Relevance	Inter-sectoral collaboration	National coverage	Experience with policy-making	Experience with granting schemes	Experience with projects	Availability and motivation	Overall mark
Metrology Bureau under the Ministry of Economy	3	3	5	4	2	2	1	21
Ministry of Agriculture, Forestry and Water Economy	3	4	5	5	4	2	1	24
Ministry of Education and Science	4	5	5	5	4	3	1	27
State University "Ss. Cyril and Methodius" – Skopje, Faculty of Mechanics	4	4	3	3	3	5	3	25
State University "Ss. Cyril and Methodius" – Skopje, Faculty of Computer Science and Engineering	4	4	3	3	3	5	3	25
State University "Ss. Cyril and Methodius" – Skopje, Faculty of Electrical Engineering and Information Technologies, Center for Technology Transfer and Innovations – INNOFEIT	4	4	4	3	5	5	5	30
Ministry of Environment and Physical Planning	5	5	5	5	4	4	1	29
State Inspectorate on Environment under the Ministry of Environment and Physical Planning	4	4	5	4	2	2	1	22
Office for Environment under the Ministry of Environment and Physical Planning	5	4	5	4	3	3	2	26
Office for Spatial Information System under the Ministry of Environment and Physical Planning	4	5	5	4	2	2	2	24
National Hydrometrological Service of the Republic of North Macedonia	3	4	5	4	2	2	2	22
Fund for Innovation and Technology Development	4	5	5	4	5	5	5	33
Eco-Sense	5	3	4	3	4	5	2	26
Macedonian Ecological Society	5	3	5	3	4	5	2	27
Konekt	4	3	4	4	4	5	2	26
NCDIEL	4	3	5	4	4	5	2	27

Pharmachem	5	2	5	2	3	4	4	25

The overall marks are ranked and the highest ranked organisations are promoted as organisations that possess significant potential for NDE. The top 10 organisations are listed in the following table:

Organisation	Overall mark
Fund for Innovation and Technology Development	33
State University "Ss. Cyril and Methodius" – Skopje, Faculty of Electrical Engineering and Information Technologies, Center for Technology Transfer and Innovations – INNOFEIT	30
Ministry of Environment and Physical Planning	29
Ministry of Education and Science	27
Macedonian Ecological Society	27
NCDIEL	27
Office for Environment under the Ministry of Environment and Physical Planning	26
Eco-Sense	26
Konekt	26
State University "Ss. Cyril and Methodius" – Skopje, Faculty of Mechanics	25

CHAPTER 4:
Conclusion

United Nations
Framework Convention on

The purpose of this report, which is part of the project "Macedonia's Fourth National Communication (NC) and Third Biennial Update Report (BUR) on Climate Change under the UNFCCC (4th NC/3rd BUR)" implemented by UNDP and the Ministry of Environment and Physical Planning, was analyzing the UNFCCC TT: Clear Mechanism, especially the possibilities for its utilization in the country, outlining initial foresights about the sectors of the Macedonian society relevant for nomination of the NDE, as well as providing basic assessment and preliminary nomination of the top 10 most potential organisations.

In 2010, the Technology Mechanism TT: Clear, as an instrument for transfer of technology and technological and institutional development between the member states of the UNFCCC was established to facilitate the implementation of enhanced action on technology development and transfer to support action on mitigation and adaptation in order to achieve the full implementation of the Convention. Today, TT:CLEAR serves as the web platform for all things related to climate technology. It houses information on the Technology Mechanism, the Technology Executive Committee and Technology Needs Assessments. Also, various technology projects from around the world could be discovered, accompanied by opportunities and ways for support and connecting with the people behind them. In addition, ongoing and competed climate change technology negotiations could be followed, policy recommendations from the Technology Executive Committee could be researched and connections with climate solutions via the Climate Technnology Center and Network (CTCN) and with climate-related technology events could be established.

Macedonian government has not nominated a National Designated Entity under this UNFCCC mechanism for climate technology yet. The initial investigation of the potential of numerous organisations in the public and private sector resulted with nominating the top 10 organisations: (1) Fund for Innovation and Technology Development; (2) State University "Ss. Cyril and Methodius" – Skopje, Faculty of Electrical Engineering and Information Technologies, Center for Technology Transfer and Innovations – INNOFEIT; (3) Ministry of Environment and Physical Planning; (4) Ministry of Education and Science; (5) Macedonian Ecological Society; (6) NCDIEL; (7) Office for Environment under the Ministry of Environment and Physical Planning; (8) Eco-Sense; (9) Konekt; and (10) State University "Ss. Cyril and Methodius" – Skopje, Faculty of Mechanics. These organisations should be examined in more details with an appropriate research methodology, in order the most suitable national institution that will act as a national focal point to be nominated and the county to be able to maximize its benefits from the utilization of the TT: Clear mechanism.

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