

Agenda item 4.a.i National Systems of Innovation

# **Update on the artificial intelligence-powered tool for identifying country needs related to the setup and implementing national systems of innovation**

TEC 32 & Joint session of the TEC - CTCN Advisory Board  
14 – 16 and 17 April 2026 | Songdo, Republic of Korea



**United Nations** Climate Change  
Technology Executive Committee

**Dietram Oppelt**  
TEC member

## Update from the activity group

Developed a proof of concept of the AI NSI Mapping Tool

- Aimed at identifying country needs related to the setup and implementation of national systems of innovation (NSI) and at translating NSI analysis into actionable outputs for policymakers
- Developed on the basis of the TEC analytical work conducted in 2023, entitled, “Good practices and lessons learned on the setup and implementation of National Systems of Innovation”.
- Operationalizes the functional NSI framework set out in the TEC publication by translating it into a structured, sector-specific self-assessment process.



# Background and rationale

## NSI FRAMEWORK — FROM CONCEPT TO COUNTRY DEPLOYMENT

TEC rolling workplan activity A.1.1 · Building blocks 2023 → 2027

### PHASE 1 · 2023

#### ANALYTICAL FOUNDATION

## Good practices & lessons learned

TEC analytical work: functional NSI framework and enabling-environment principles for climate technology.

**Status** · Published (TEC publication, 2023)

### PHASE 2 · 2025–26

#### OPERATIONALIZATION

## AI NSI Mapping Tool & country analyses

Proof-of-concept AI-powered tool for country needs identification; pilot-country testing and Catalyst Action Plans.

**Status** · Concept approved TEC 31 · Concept refinement at TEC 32

### PHASE 3 · 2027

#### KNOWLEDGE PRODUCT

## NSI guide for climate action

Comprehensive, implementation-oriented knowledge product consolidating tool, pilot findings and policy recommendations.

**Status** · Annotated outline targeted TEC 33



## User Inputs and Data Collection

- Assessment initiated through structured inputs by a country representative
- Mandatory country selection to contextualize recommendations and reference materials
- Selection of one climate technology sector per assessment
- Users prioritize NSI functions (high / medium / low priority)
- Maximum of two interrelated high-priority functions subject to deeper analysis



## Catalyst Action Plan – Analytical Logic and Outputs

### INTEGRATED INPUTS

- NSI self-assessment & function prioritization
- Structural analysis results
- Country-, sector- & region-specific context
- Evidence from international good practices



#### WHAT IT IS

### Catalyst Action Plan

A country- and sector-specific action package that turns the NSI self-assessment into prioritized, implementation-ready recommendations — diagnostic & catalytic, not a benchmark.

### KEY OUTPUTS

- Executive summary
- Analysis by NSI function
- Gaps, barriers & structural weaknesses
- Implementation-oriented recommendations aligned with TEC guidance



# Initial feedback

## ■ WHAT THE TOOL IS FOR

### A **compass**, not a scorecard

The tool helps a country decide **what to do next** with its innovation system — it is not a test to pass or fail.

Its value is in prompting reflection, setting priorities and triggering follow-up action — not in producing a one-off assessment.

## ■ HOW IT WORKS

### Countries **score themselves** — no league table

Answers come from the country's own experts. Results tell **you** what to improve — they never rank you against other countries.

#### READ THE OUTPUTS AS ...

- ✓ Indicative & policy-informing
- ✗ Not a benchmark or country ranking

## ■ WHAT PILOT COUNTRIES TOLD US

### Make it easier to go from **insight to action**

Testers liked the concept. Three things need to be sharper before wider roll-out:

1. Clearer step-by-step user guidance
2. Outputs policymakers & investors can act on
3. Visual summaries that make findings obvious

#### BOTTOM LINE

The **concept works** — the next iteration focuses on usability, decision-ready outputs and clear visuals, so findings actually turn into national interventions.



# Outline of the knowledge product

## **I. Executive Summary**

## **II. Introduction**

## **III. Methodology**

## **IV. NSI Mapping Tool development**

- Pilot testing
- Case study selection
- Data collection and analysis
- Country Case Studies

## **V. Country context**

- Selected climate technology sector(s)
- NSI self-assessment results

- Key strengths, gaps, and weaknesses
- Catalyst Action Plan recommendations
- Stakeholder feedback

## **VI. Cross-Cutting Insights and Lessons Learned**

## **VII. Recommendations Policymakers and NDEs**

- Regional and international partners
- Scaling the NSI Mapping Tool

## **VIII. Conclusion and Key Messages**



# Next Steps

01

REFINE THE MAPPING TOOL

Incorporate TEC 32 feedback

- ✓ Integrate feedback received at TEC 32
- ✓ Revise the tool based on proof-of-concept findings
- ✓ Strengthen user guidance and visual summaries

DELIVERABLE

Revised NSI Mapping Tool

02

DEVELOP COUNTRY ANALYSES

Expand pilot coverage

- ✓ Conduct analysis in six pilot countries
- ✓ Consider expanding reach beyond NDEs — e.g. other institutions, NFPs
- ✓ Engage the Joint Research Centre as a lead partner [proposed]

DELIVERABLE

Country Catalyst Action Plans

03

PREPARE KNOWLEDGE PRODUCT

Annotated outline

- ✓ Consolidate methodology, pilot findings and recommendations
- ✓ Draft annotated outline of the NSI knowledge product
- ✓ Present at TEC 33 for Committee guidance

DELIVERABLE

Annotated outline — TEC 33

MILESTONE

TEC 33 · review of revised tool, country analyses and annotated outline of the knowledge product · Knowledge product finalized 2027





**United Nations** Climate Change  
Technology Executive Committee

TEC 32 & joint session of the TEC - CTCN Advisory Board