UNITED ARAB EMIRATES
MINISTRY OF CLIMATE CHANGE
& ENVIRONMENT

# UAE Green Key Performance Indicators

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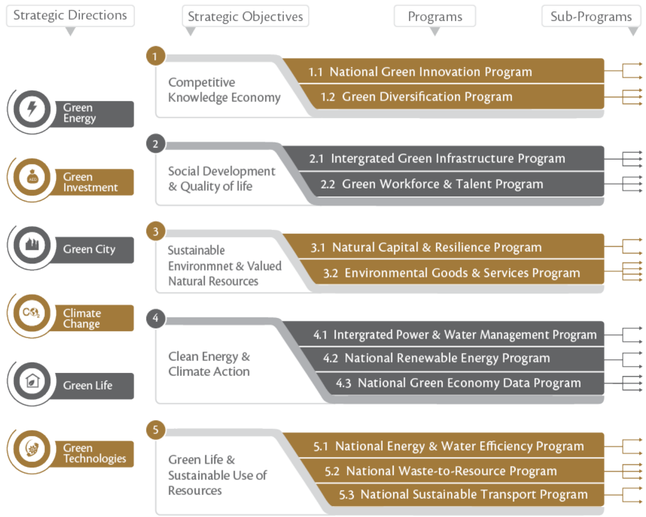
# Monitoring the Progress of the UAE Green Agenda

## UAE Green Agenda 2030

The **UAE Green Agenda 2030** was approved by the Cabinet in January 2015 as an implementation framework of the UAE Green Growth Strategy, which was originally launched by His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, in January 2012. The Strategy aims to put forward the country's ambition to become a global hub and a successful model for the low-carbon green economy so as to enhance the competitiveness and sustainability of its development and preserve its environment for future generations. 6 focus areas presented in this strategy are: Green Energy; Green Investment; Green City; Climate Change; Green Life; and Green Technologies.

Through the subsequent extensive stakeholder consultation process, the Green Agenda was developed in collaboration with the Global Green Growth Institute (GGGI). In line with the country's overall development objectives set by the UAE Vision 2021, 5 strategic objectives and 12 main programs were set under the Green Agenda. The execution of the Green Agenda has been overseen by the **Emirates Council on Climate Change and Environment**, which is chaired by H.E. Dr. Thani Al Zeyoudi, Minister of Climate Change and Environment and consists of representatives from diverse federal ministries and all 7 emirates.



Structure of the UAE Green Agenda 2030

## Measuring the Green Economy Transformation

The green transformation of the UAE economy requires the activation of both enabling government policies and initiatives from the private sector and civil society. To guide the formulation of policy instruments as well as voluntary activities to the right course, it is critical to establish a set of indicators as an effective compass that can monitor and assess the underlying developments, progress, and potential opportunities and risks. The refined indicators should serve as solid evidence based on which policy makers can set clear goals, formulate policies, review progress and evaluate impacts.

Measuring the complex and multi-dimensional nature of green economy is a challenging task and no agreed set of indicators exist to date despite several international organizations such as the OECD, the UN Environment and the GGGI are making efforts.

Whereas standardization and comparability are desired for such indicators, countries also require flexibility to meet their different needs and pathways, which largely depend on national circumstances, capacities and levels of development. Lack of available data is another barrier to developing a meaningful set of green economy indicators.

The UAE Ministry of Climate Change and Environment (MOCCAE) has made first attempts to overcome such challenges and managed to develop an original framework of green economy indicators which serves for the Green Agenda objectives, namely the **UAE Green Key Performance Indicators** (KPIs). MOCCAE has compiled the performance of each indicator as far as data is available and started reporting to the public annually through the **UAE State of Green Economy Report** since 2015.

# Development of UAE Green KPIs

## Framework of Green KPIs

While the Sustainable Development Goals (SDGs) were adopted by 193 countries in 2015 as the global common ambition towards 2030, the measurement for the green economy transformation needs to go a step further in capturing the economy-environment nexus — the extent to which economic activity is being greened and green initiatives contributes to economic growth.

In the traditional economic model, a direct source of economic growth is the growth of inputs such as labor, produced capital such as machines, and intermediate inputs in production such as steel in the automobile industry. The role of inputs in economic growth has been primarily valued by efficiency of producing outputs which can be increased by improved human capital and organization as well as technological change.

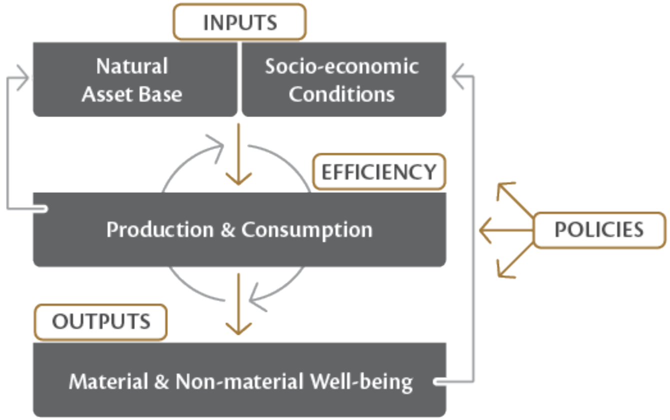
Such a traditional measurement of production does not properly reflect natural capital as production inputs like other forms of capital, despite they constitute essential inputs into production and consumption. The lack of markets and prices for many natural assets and environmental services has led to their overuse and deterioration, generating negative externalities. Furthermore, the amenity services that support a broader notion of well-being are often not traded and hence not well captured by standard economic indicators such as GDP.

Therefore, in the development of the UAE Green KPIs, a new framework for identifying and selecting indicators was elaborated by integrating environmental considerations into the conventional input-productivity-output model as displayed in the figure on the right.

## Selection of Indicators

Several quantifiable indicators were identified from each of the four categories of the developed indicator framework. Those indicators originate from the recommendations of the OECD, the UN Environment and the GGGI as well as the input from the consultation process for developing the Green Agenda. Some of National KPIs which were established under the Vision 2021 have also been taken where relevant. In the selection of a limited set of indicators, the four criteria suggested by the OECD – policy relevance; analytical soundness; measurability; and usefulness in communication – were taken into consideration, as well as the availability of data in the country.

As a result of this exercise, **41 Green KPIs** were selected and classified according to the three dimensions (environmental, economic and social) of sustainable development. It is hoped that this indicator set would greatly help policy makers, industry and civil society to understand the dynamism of the economy-environment nexus so that they can better plan and direct Green Agenda policies and initiatives to the right course.




Framework for developing the UAE Green KPIs

# List of the UAE Green KPIs - Environment

41 UAE Green KPIs are listed below according to the three dimensions of sustainable development, with brief background information. These indicators are serving as a baseline for regular monitoring and setting future targets as well as international benchmarking.

This set of indicators is the first attempt at capturing green economy performance in the country, not a definitive or exhaustive list. They will be refined or new indicators may be added as the experiences and data availability will improve. As indicators are proxies and may over-simplify the underlying reality, they should be interpreted in an appropriate manner.

| Environmental KPIs | | |
|---|---|---|
| ENV1 | Rate of groundwater abstraction | Groundwater is primarily used for irrigating farmland and forests, and water levels are depleting. |
| ENV2 | Water consumption per capita | Most municipal water is produced through energy-intensive desalination processes. |
| ENV3 | Waste generation per capita | Nearly 2/3 of waste generated from construction and demolition, and 1/4 from municipal waste. |
| ENV4 | *Rate of waste recovery* | The national target is 75% recovery of municipal solid waste by 2021. |
| ENV5 | Energy consumption per capita | Decoupling energy use from rapid population growth is a key to enable a green economy. |
| ENV6 | *Rate of non-fossil energy* | The national target is 27% of total energy mix coming from clean energy sources by 2021. |
| ENV7 | **Carbon intensity of energy** | A measure to evaluate the deployment of clean energy and efficiency in the conventional generation |
| ENV8 | Total GHG emissions | A fundamental measure to follow up the commitment to the Paris Climate Agreement |
| ENV9 | **Ecological Footprint** | All the ecological services humans demand are measured against the planet's capacity to regenerate. |
| ENV10 | Number of environmental regulations | A most fundamental tool for government to tackle pollution and degradation of natural resources |
| ENV11 | Number of environmental standards | Standards encourage innovation and adoption of efficient technologies while directing demand. |
| ENV12 | Ratio of protected areas | Protected areas are at the core of policy efforts for protecting biodiversity and ecosystem services. |
| ENV13 | Environmental expenditure | A primary indication of what extent the country considers environmental sustainability as a priority |
| ENV14 | **Environmental Performance Index** | An composite index that quantifies the environmental performance of countries based on 9 categories |
| ENV15 | Ratio of green vehicles | Uptake of greener vehicles would greatly contribute to the reduction of GHG emissions. |

Note: Indicators in *Italic*: Corresponding to National KPIs
Indicators in **Bold**: Headline indicators (see p.6-7)

# List of the UAE Green KPIs - Economic

| Economic KPIs | | |
|---|---|---|
| ECO1 | Real GDP growth (per emirate) | GDP is the most common measure of economic activity of a nation or a region. |
| ECO2 | Share of non-oil GDP | Growth of the non-oil sector helps mitigate the fluctuation of oil revenues. |
| ECO3 | Share of non-oil export | Production and export of non-oil goods is key to economic diversification. |
| ECO4 | GDP from environmental goods & services | The EGS sector will be the prime contributor in a prospective green economy. |
| ECO5 | *R&D expenditure in GDP* | R&D is one of the key factors to spur innovation and technology advancement. |
| ECO6 | *Foreign direct investment net inflows* | Foreign investment would help accelerate development of new industries. |
| ECO7 | *Doing Business Index* | A measure to judge whether a country's regulatory framework can attract businesses |
| ECO8 | ***Global Competitiveness Index*** | Evaluate institutions, policies and factors that determine national productivity. |
| ECO9 | **Water consumption per GDP** | Efficiency of water use is key to avoid over-exploitation and degradation of resources. |
| ECO10 | Waste generation per GDP | A barometer to understand the efficiency of material use in generating economic value |
| ECO11 | **Energy consumption per GDP** | Decoupling energy use from growth is as important as deploying clean energy. |
| ECO12 | **Material consumption per GDP** | The challenge is to ensure that materials are used efficiently throughout their lifecycle. |
| ECO13 | GHG emissions per GDP | Stabilizing the global temperature is dependent on how fast GHGs can be decoupled. |
| ECO14 | **Efficiency of water & electricity production** | Best technologies in fossil-fuel power generation and desalination should also be promoted. |
| ECO15 | Average fuel efficiency of vehicles | Fuel efficiency would also help save subsidies and reduce potential loss in export revenues. |

Note: Indicators in *Italic*: Corresponding to National KPIs
Indicators in **Bold**: Headline indicators (see p.6-7)

# List of the UAE Green KPIs - Social

| Social KPIs | | |
|---|---|---|
| SOC1 | Labor participation rate | Labor is one of the most essential inputs for production. Raising female participation is key to success. |
| SOC2 | Employment rate | OECD guides to measure labor market dynamics by labor participation rates and unemployment rates. |
| SOC3 | *Emiratization rate* | Nationals in the workforce will provide a foundation for the long-term economic success. |
| SOC4 | Number of green jobs | While not universally defined, jobs that contribute to environmental quality are expected to rise. |
| SOC5 | Number of UAE patents | Number of patents is one of few measurable proxies of R&D outcomes, or more broadly, innovation. |
| SOC6 | **Global Innovation Index** | A measure to evaluate a country's enabling environment for innovation and innovation outputs |
| SOC7 | *Global Entrepreneurship Index* | Entrepreneurship is required to tackle global challenges such as poverty and climate change. |
| SOC8 | Environmental awareness rate | Awareness creates a foundation to shift behavior of individuals and organizations to greener one. |
| SOC9 | Environmental behavior rate | Personal choices in daily life greatly affect on economic outcomes as well as the environment. |
| SOC10 | **Human Development Index** | A popular UN approach of measuring welfare as an alternative to GDP growth |
| SOC11 | *World Happiness Index* | A measure to assess what extent individuals feel happy and satisfied with their lives in a country |

Note: Indicators in *Italic*: Corresponding to National KPIs
Indicators in **Bold**: Headline indicators (see p.6-7)

# Allocating the Indicators to the Green Agenda Objectives

Each UAE Green KPI is allocated under one of the 5 strategic objectives of the Green Agenda to better understand the trends and place clear accountability for improving performance. One of the federal ministries is appointed to coordinate the implementation of each strategic objective and is designated as a custodian of the allocated 5-10 KPIs as presented in the table. The results of the Green KPIs are compiled each year and are reported to the Emirates Council on Climate Change and Environment, which oversees the execution of the Green Agenda.

Furthermore, 2 headline indicators are selected for each strategic objective, and a total of 10 headline indicators make up the **Green KPIs Smart Dashboard**, which helps decision-makers, particularly the Council members, quickly grasp the overall progress of the Green Agenda.

It should be noted that the outcome of each Green KPI is inevitably influenced by the activities of different Green Agenda programs and other factors that may not be controlled by government and stakeholders, and that the performances cannot be attributed only to a single strategic objective. The results and analysis of Green KPIs are annually reported in the **UAE State of Green Economy Report**.

| Strategic Objective | Headline Indicators | Other designated Green KPIs | Other relevant Green KPIs |
|---|---|---|---|
| 1. Competitive Knowledge Economy | *ECO8: Global Competitiveness Index* | ECO1: Real GDP growth (per emirates) | ENV13 ,8 |
| | | ECO2: Share of non-oil GDP | |
| | | ECO3: Share of non-oil export | |
| | | *ECO5: R&D expenditure in GDP* | ECO13 ,12 ,11 ,10 ,9 ,4 |
| | | *ECO6: Foreign direct investment net inflows* | |
| | *SOC6: Global Innovation Index* | *ECO7: Ease of Doing Business Index* | SOC11 ,10 ,8 ,4 ,3 ,2 ,1 |
| | | SOC5: Number of UAE patents | |
| | | *SOC7: Global Entrepreneurship & Development Index* | |
| 2. Social Development & Quality of Life | ECO12: Material consumption per GDP | SOC1: Labor participation rate | ENV15 ,14 ,13 ,12 ,11 ,10 ,9 ,8 ,5 ,4 ,3 ,2 |
| | | SOC2: Employment rate | |
| | | SOC3: Emiratization rate | ECO15 ,13 ,12 ,11 ,10 ,9 ,4 ,3 ,2 ,1 |
| | *SOC10: Human Development Index* | SOC4: Number of green jobs | SOC7 |
| | | *SOC11: World Happiness Index* | |

cont →

Note: Indicators in *Italic*: Corresponding to National KPIs

## Allocating the Indicators to the Green Agenda Objectives

| | | | |
|---|---|---|---|
| 3. Sustainable Environment & Valued Natural Resources | ENV9: Ecological Footprint<br><br>ENV14: Environmental Performance Index | ENV1: Rate of groundwater abstraction<br>ENV10: Number of environmental regulations<br>ENV11: Number of environmental standards<br>ENV12: Ratio of protected areas<br>ENV13: Environmental expenditure<br>ECO4: GDP from environmental goods and services<br>SOC8: Environmental awareness rate<br>SOC9: Environmental behavior rate | ENV8 ,5 ,4 ,3 ,2<br><br>ECO13 ,11 ,10 ,9 ,3 ,2<br><br>SOC11 ,7 ,4 |
| 4. Clean Energy & Climate Change Adaptation | ENV7: Carbon intensity of electricity<br><br>ECO14: Efficiency of water and electricity production | *ENV6: Rate of non-fossil energy*<br>ENV8: Total GHG emissions<br>ECO13: GHG emissions per GDP | ENV14 ,13 ,9 ,4 ,2<br><br>ECO11 ,9 ,4 ,2<br><br>SOC4 |
| 5. Green Life & Sustainable Use of Resources | ECO9: Water consumption per GDP<br><br>ECO11: Energy consumption per GDP | ENV2: Water consumption per capita<br>ENV3: Waste generation per capita<br>*ENV4: Rate of waste recovery*<br>ENV5: Energy consumption per capita<br>ENV15: Ratio of green vehicles<br>ECO10: Waste generation per GDP<br>ECO15: Average fuel efficiency of vehicles | ENV14 ,13 ,11 ,10 ,9 ,8<br><br>ECO15 ,13 ,12 ,4<br><br>SOC11 ,9 ,8 ,4 |

Note: Indicators in *Italic*: Corresponding to National KPIs

# UAE Green Key Performance Indicators

Please download
the *UAE State of Green Economy Report*
for the latest results of Green KPIs

For further information or for provision of feedback:

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