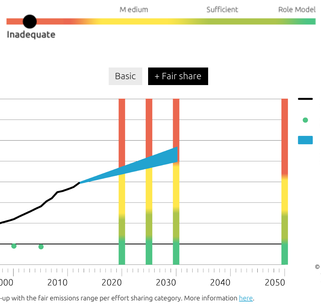
CLIMATE ACTION TRACKER

UAE

History: 2017 | 2015

Page last updated: 30th November 2015

Rating



Note: Hover over the coloured bars for a pop-up with the Fair emissions range per effort sharing category. More information here.

Assessment

On 22nd October 2015, the United Arab Emirates submitted its Intended National Determined Contribution (INDC), pledging to pursue a strategy of economic diversification that will yield co-benefits in terms of both mitigation and adaptation to climate change. We rate UAE's INDC "inadequate."

UAE's INDC does not provide an economy-wide greenhouse gas (GHG) emissions reductions target expressed in terms of reductions below a base year, or business-as-usual levels. Instead, it qualitatively describes a number of measures targeting all sectors of the economy, without presenting abatement in terms of GHG.

The INDC emphasises its target to increase the share of clean energy to 24% of the total energy mix by 2021. Our current policy projection, including this target—the only quantifiable element of the INDC— projects that the UAE emissions in 2030 will be in the inadequate range (Masdar Institute & IRENA, 2015). Unless more transparent information is provided in terms of baseline emissions and the intended emissions abatement delivered by the portfolio of policies proposed, we consider the UAE INDC scenario is equivalent to the current policy projections and we therefore rate its INDC "inadequate."

According to our estimates the UAE's greenhouse gas emissions would reach approximately 450 $MtCO_2e$ excl. LULUCF in 2030, which is a 65% increase above 2010 levels or a 600 % increase above 1990 levels. To do its "fair share" of global efforts to hold warming below 2°C and be rated "sufficient," the UAE should have pledged to reduce its emissions by 42% relative to 2010 – but the current trajectory of emissions is heading the opposite way.

The INDC's completeness and transparency is far from being in line with a country that acknowledges that 85% of its population and 90% of its coastal zones are at risk of climate change (Ministry of Energy, 2015). The UAE could have taken the lead in the oil exporting countries to forge its commitment to climate change through an ambitious INDC, especially when, as of 2014, its renewable energy is cost competitive (Masdar Institute & IRENA, 2015). The UAE has excellent conditions to increase the role of renewables in its power sector: on November 2014, a 100 MW solar power plant was commissioned at a world record low cost of 5.98 cents per kWh.

Post-2020 contribution

On 22nd October 2015, the United Arab Emirates submitted its INDC with the aim of diversifying its economy through plans and actions that will yield co-benefits in mitigation, and adaptation to climate change, including a target of increasing clean energy from 0.2% in 2014 to 24% of the total energy mix by 2021. Beside the clean energy target, measures targeting the energy, buildings and transport sector are listed in the INDC. None of these targets have been quantified in terms of CO_2 abatement.

Copenhagen pledge	
2020 target	none
INDC	
2030 target	Economic diversification through plans that will yield co-benefits in mitigation and adaptation to climate change Target is not quantified
Coverage	economy-wide

To improve the emissions intensity from its supply side, the UAE government plans to promote the reduction of gas flaring in its oil and gas industry and make use of carbon capture, usage and storage. To improve efficiency from the demand side, utilities are gradually increasing the electricity tariff to be able to leverage the potential of demand side management. Efficiency standards in the building sector have been in place since 2011 in Abu Dhabi and since 2014 in Dubai. Also, UAE has introduced efficiency standards for residential appliances to phase out inefficient products from the market. To reduce the greenhouse emissions in the transport sector, the UAE phased out fossil fuel subsidies in August 2015 and is the first country in the region to set its gasoline and diesel prices in line with global prices (IEA, 2015). To increase the share of public transport, the Emirate of Dubai has invested in a multi-billion dollar light rail and metro system. For freight transport, the government plans a rail network connecting all seven emirates and integrated to the Gulf countries – and it's set to launch in 2017.

It is remarkable to see sustainability measures in UAE taking off at a faster pace than any other oil exporting country. Still, its INDC is lacking transparency and missing quantified commitment targets. It does not reflect the UAE's potential to do its fair share towards climate change, especially when a recent national study proved that if the clean energy target of the INDC were to be increased to 42%, the UAE would save an additional 35 $MtCO_2e$ in 2030, and generate annual savings of $1.9 billion based on the avoidance of fossil fuel consumption (Masdar Institute & IRENA, 2015).

Fair share

Taking into consideration the 24% clean energy target, we rate UAE's INDC inadequate. This means that the UAE is not in line with interpretations of a "fair" approach to reach a 2°C pathway: if all countries adopted this level of ambition, global warming would likely exceed 3-4°C in the 21st century.

To be rated "medium" the UAE would have to submit a target of reducing GHG by between 60 and 120 $MtCO_2e$ in 2030 compared to our current policy projection. If the other measures listed in the INDC were to achieve a GHG abatement of this magnitude with a specific target year, the INDC could be upgraded to "medium". This would still mean, however, that the UAE's climate plans would be at the least ambitious end of what would be a fair contribution.

For it to be rated sufficient, the target should be raised to 300 $MtCO_2e$ below our current policy projection in 2030. This is equivalent for the UAE to pledge to reduce emissions by 42% in 2030 relative to 2010. Only then, would the UAE efforts be consistent with its "fair share" to limit global warming below 2°C.

Current policy projections

CAT estimates that the UAE greenhouse gas emissions would reach approximately 450 $MtCO_2e$ excl. LULUCF in 2030, which is a 65% increase compared to 2010 levels, or a 600% increase above 1990 levels. Our current policy projection is equivalent to a business as usual scenario which is based on a recent national source that takes into account the existing policies, plans and trends, including the clean energy target of the INDC (Ministry of Energy, 2015). Energy demand is forecast separately for the industry, building, transport and power sectors, and the total final energy consumption is expected to increase annually by 3.4% from 2010-2030, with the highest contribution coming from the industry sector.

Increasing energy efficiency became a key national strategy to reduce local energy consumption, after which the UAE became a net importer of natural gas in 2008. With electricity and desalinated water generation dependent on natural gas, the rapidly growing population tipped the balance, with domestic gas consumption exceeding production that year (Ministry of Energy, 2012). In addition, the traditionally subsidised energy and water prices led to a culture of wasteful energy usage, which would further render the UAE economy increasingly reliant on gas imports in the future.

In light of these developments, green building codes became mandatory in 2011 in Abu Dhabi under the Estidama Program and in 2014 in Dubai[1]. Energy efficiency standards, and labels for air conditioners and other electrical equipment have been introduced in the UAE, and inefficient light bulbs have been banned from import since 2014 (Ministry of Energy, 2015). To decarbonise the power sector and reduce dependence on natural gas, 5.6 GW of nuclear power plant will come online in by 2021 and 3 GW of solar power should be installed by 2030 (Masdar Institute & IRENA, 2015). A South Korean consortium has been awarded the contract to build the nuclear power plants and there is already a framework for competitive tendering of solar power plants already exists in the UAE (Masdar Institute & IRENA, 2015). Achievement of both targets will allow low-carbon energy to contribute to 24% of the energy mix in 2021 as outlined in the INDC.

In August 2015, fossil fuel subsidies for the transport sector have been phased out to adjust fuel prices to global prices. Our projection does not include the impact of such reform.

Assumptions

Historical emissions

Historical emissions for the year 1994, 2000 and 2005 were obtained from the latest UNFCCC GHG Inventory. We interpolated for the years in between. We extrapolated for the years below 1994 and above 2005 up to 2012 using growth rates for CO_2 from fuel combustion from the IEA and growth rates for other CO_2 emissions and non CO_2 emissions from the EDGAR database.

Current policy projections

The current policy projection has been quantified with a range.

The top end of the range represents the energy related CO_2 emissions from fuel combustion, using growth rates between the 2010 and 2030 emissions from fuel combustion found in a study by the Masdar Institute & IRENA (2015). Our reference point for energy related CO_2 emissions in 2010 is then multiplied by the growth rate.

The lower end of the range represents the energy related CO_2 emissions from fuel combustion by adding the absolute difference between the 2010 and 2030 emissions from fuel combustion found in a study by the Masdar Institute & IRENA (2015). The absolute difference is added to our reference point for energy related CO_2 emissions in 2010 in the UAE.

The reason our reference point in 2010 differs from the 2010 data point of the study by the Masdar Institute & IRENA (2015) is due to data inconsistency between the IEA and the second national communication of the UAE in 2005. The latter reports emissions from fuel combustion reaching 150 Mt CO_2, whereas the IEA reports 110 Mt CO2 for that year. The CAT uses the 2005 data point of the Second National Communication and then applies the IEA growth rates to extrapolate the trend till 2010 to obtain 210 $MtCO_2$. The 2010 data point of (Masdar Institute & IRENA, 2015) refers to the IEA data of 152 $MtCO_2$.

Non-energy related CO_2 emissions were taken from JRC/PBL (2012). Average annual growth rates between the years 2000 and 2010 are used to extrapolate non-energy related CO_2 emissions by 2030.

Non-CO_2 emissions were taken from JRC/PBL (2012). Projected growth rates from US EPA (2012) are used to estimate the growth in non-CO_2 emissions.

The CO_2 emissions from fuel combustion, the non-energy related CO_2 emissions and the non-CO_2 greenhouse gas emissions are added up to get the projections of GHG emissions in the UAE.

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Footnotes

[1] There exists still no federal policy but only Emirate-level policies which vary throughout the UAE. The Ministry of Energy is leading the country's first effort to develop a national strategy.

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