A RAIA profile on: **the President of the United Mexican States**

Claudia Sheinbaum

First part of a six part series on climate leaders ahead of the 2025 United Nations Climate Change Conference

School of Politics, Economics & Global Affairs and RAIA NOW gUG's Summer Research Programme 2025

Author: Josip Biondić & Manuela Altés Alcaraz

Editor: Francia Morales

Project Leads: Roxane de Bergevin & Stefani Obradovic

Table of Contents

Table of Contents **2**
Introduction **3**
Sheinbaum's Stake **5**
Air Pollution 7
Water Scarcity & Biodiversity Loss 10
Fossil Fuels & Energy 12
Political Stakes 14
Sheinbaum's Defining Moment **18**
Sheinbaum's Solutions **21**
Mexico City Public Transport Reform 21
National Water Plan 2024-2030 24
Energy Policy 2024-2030 26
Sheinbaum's Solutions in Action **30**
Mexico City Public Transport Reform 30
National Water Plan 2024-2030 33
Energy Policy 2024-2030 36
Conclusion **38**
References **42**

Sponsorship: This report is a collaboration between IE University' IE School of Politics, Economics and Global Affairs and RAIA NOW gUG. The funding for this project solely comes from the IE School of Politics, Economics and Global Affairs.

Introduction

Claudia Sheinbaum is Mexico's first female, Jewish, climate scientist president. She brings a unique perspective to the presidency; her own mother, Annie Pardo, is a biologist and professor emeritus at the National Autonomous University of Mexico (UNAM) in Mexico City, and her father, Carlos Sheinbaum, a chemical engineer.[1] Similarly, her brother studied, and convinced her to study physics as an undergraduate student at UNAM in the 1980s.[2] In addition to her scientific commitment to protecting life, Sheinbaum also comes from a family with a history of political exile, as her Lithuanian grandparents were Jewish and were forced to flee due to their communist affiliations.[3]

Her family's political awareness was shaped by these conditions, drawing them toward Mexico's progressive movements. In 1998, the Consejo Estudiantil Universitario at UNAM led a major mobilization, organizing mass protests and general strikes against Rector Jorge Carpizo's proposed tuition increases and academic reforms.[4] Although she was only six during the 1998 student protests, she recalls bringing food to political prisoners in the Lecumberi prison, finding Marx's *Capital* hidden in closets and phone conversations being monitored for safety.[5] Between direct conversations with her parents and overhearing political meetings, Claudia was taught from a young age to "change this system."[6]

Sheinbaum is no stranger to breaking a glass ceiling throughout her extensive scientific and political career. Beginning by studying physics at UNAM in the late 1980s, she would go on to specialize in the field of energy engineering, obtaining her first PhD with a thesis comparing energy efficiency between Mexico and other OECD states in 1994.[7] In the decades since, she wrote and published several dozen reports,

---

[1] Ramírez González, Jorge Efraín. "Las mediaciones de la prensa digital sobre Claudia Sheinbaum y Xóchitl Gálvez durante la precampaña 2024." Tesis de Especialización, Centro de Estudios de Opinión y Análisis, Universidad Veracruzana, Región Xalapa, September 2024.
[2] Lizzie Wade, "Can an Environmental Engineer Fix Mexico City?" Science, June 2018, https://www.science.org/content/article/can-environmental-engineer-poised-become-mayor-fix-mexico-city.
[3] Redilat, "Una mujer en la presidencia: el proyecto de Claudia Sheinbaum," LATAM – Revista de Política y Sociedad, 2023, https://latam.redilat.org/index.php/lt/article/view/1735/2385.
[4] Allier Montaño, Eugenia. "Presentes–pasados del 68 mexicano. Una historización de las memorias públicas del movimiento estudiantil, 1968–2007." Revista Mexicana de Sociología, vol. 71, no. 2, abr.–jun. 2009, pp. 245–278, https://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0188-25032009000200003.
[5] Cano, Arturo, *Claudia Sheinbaum: presidenta, México* (Grijalbo, 2023) pp. 4.
[6] Redilat ibid.
[7] Claudia Sheinbaum, 'Perfil de Claudia Sheinbaum Pardo' (Instituto de Ingeniería, UNAM) https://www.iingen.unam.mx/es-mx/Investigacion/Academicos/Paginas/CSheinbaumP.aspx accessed 6 June 2025.

including some that netted Sheinbaum additional doctorates, most of which were focused on energy consumption and technological efficiency.[8]

Although a member of the Partido Revolucionario Institutional (PRI) since 1989, her first major political position was her tenure as the Secretary of Environment under López Obrador's Mexico City administration between 2000 and 2006.[9] Sheinbaum would come to be closely associated with López Obrador, especially in the political scene, as they were both founding members of the Movimiento de Regeneración Nacional (Morena) party in 2014.[10] Their frequent, although not perpetual, collaboration during his presidency, when Sheinbaum became head of Mexico City's government, would cement their association.[11]

Her mayorship is highlighted for a strong focus on recalibrating the city's relationship with nature[12] through expanding green spaces, cleaning local water supplies, and reducing CO^2 emissions.[13] Her time leading the city did not go without controversy, however, including the fatal Metro Line 12 collapse in 2021,[14] and environmental backlash for her approval of highway construction through the protected Xochimilco wetlands.[15]

---

[8] Claudia Sheinbaum, Belizza J. Ruíz, and Leticia Ozawa, 'Energy consumption and related CO_2 emissions in five Latin American countries: Changes from 1990 to 2006 and perspectives' (2011) 36(6) *Energy* 3629–3638 https://doi.org/10.1016/j.energy.2010.07.023.

[9] Diego Oré, 'Mexico's Sheinbaum: From Activist to Climate Scientist to Presidential Frontrunner' (*Reuters*, 31 May 2024) https://www.reuters.com/world/americas/mexicos-sheinbaum-activist-climate-scientist-presidential-frontrunner-2024-05-31/ accessed 13 June 2025.

[10] Oré ibid.

[11] Vanda Felbab-Brown and Diana Paz García, 'Mexico, López Obrador, and Sheinbaum's Presidential Victory', (*Brookings*, 10th June, 2024) https://www.brookings.edu/articles/mexico-lopez-obrador-and-sheinbaums-presidential-victory/ accessed 30th of June, 2025)

[12] MBN Staff, 'Sheinbaum Is Recognized for Global Leadership in Sustainability' (*Mexico Business News*, 14 November 2024) https://mexicobusiness.news/policyandeconomy/news/sheinbaum-recognized-global-leadership-sustainability accessed 13 June 2025.

[13] MBN Staff, 'Sheinbaum's Green Legacy: Environmental Leadership in Mexico City' (*Mexico Business News*, 31 January 2024) https://mexicobusiness.news/policyandeconomy/news/sheinbaums-green-legacy-environmental-leadership-mexico-city accessed 13 June 2025.

[14] Cassandra Garrison and Dave Graham, 'Analysis: Mexico City metro exposes "Achilles heel" of mayor's presidential dreams' (*Reuters*, 23 January 2023) https://www.reuters.com/.../mexico-city-metro-exposes-achilles-heel-mayors-presidential-dreams-2023-01-23/ accessed 13 June 2025.

[15] Louise Duff, Letter to Mayor Claudia Sheinbaum, Chair of the World Wetland Network (2023), cited in World Wetland Network, 'Standing up for a Mexico City Ramsar site' (2023) https://worldwetland.network/news-en/standing-up-for-a-mexico-city-ramsar-site/ accessed 30 May 2025.

Since becoming Mexico's president in October of 2024, Sheinbaum has been in the public eye on an unprecedented level, and is choosing to frame herself as a social justice climate leader, often combining environmental concern with her stance on social justice and economic inequality. This report will look at the contextual background of Sheinbaum's presidency, the moment which has been chosen as defining her environmental leadership, and several of her climate policies, both in theory and in practice.

Due to the recent nature of her presidential inauguration, this research faces longitudinal data limitations, given that the majority of her policies are in early implementation stages. Therefore, the analysis of her presidential policies in action are subject to changes as they develop. To counterbalance this, one of the policies selected was from her time governing Mexico City. Examining such a policy that has had time to be implemented fully and has produced enough subsequent data to estimate the impact will offer insight into how faithful Sheinbaum's policy implementation is to its original intention.

The purpose of this research is to analyze whether Claudia Sheinbaum holds up as a climate leader. This is done firstly by exploring Mexico and Sheinbaum's stakes in her climate policies. These include air pollution, water scarcity and biodiversity, fossil fuel and energy, and her political stakes. Next, the moment in which her career was defined by a crucial commitment to climate action is discussed. Afterward, three solutions enacted by Sheinbaum during her mayoral term in Mexico City and during her presidency will be described and evaluated. These solutions include her public transportation reform, National Water Plan and energy policy.

Sheinbaum's Stake

Mexico is part of North America and the third largest country in Latin America, covering 1,972,550 sq km.[16] As one of the most biologically diverse countries in the world, a range of biomes can be found due to the varied geography, altitude, and climate.[17] It holds a population of 129.8 million people bordering the United States, Guatemala, and Belize.[18] The capital is Mexico City.

[16] BBC News, Mexico country profile (BBC, 4 October 2024) https://www.bbc.com/news/world-latin-america-18095241 accessed 15 July 2025.
[17] WorldAtlas, Ecological Regions of Mexico, https://www.worldatlas.com/articles/ecological-regions-of-mexico.html, accessed 15 July 2025.
[18] Encyclopædia Britannica, 'Mexico', Britannica, https://www.britannica.com/place/Mexico accessed 15 July 2025.

Historically Mexico is a nation with a rich indigenous history with Pre-Columbian Mexico being one of the world's cradles of civilization.[19] Along with Spanish colonization, structural inequalities solidified through gender, race, the environment and the economy.[20] One way this can be seen is in Mexico's categorization as a highly unequal country with a Gini coefficient of around 0.5.[21]

The political system is composed of a 32-state federal presidential constitutional republic led by a presidency serving a single six-year term.[22] On June 2 2024, Claudia Sheinbaum was elected by over 60 million Mexican voters to succeed the previous president, Andrés Manuel López Obrador (AMLO), and continue their party MORENA's shared objective of the coined Fourth Transformation.[23] This refers to AMLO's agenda aimed at redefining Mexico's political and social order through policies aimed at combating corruption, increasing support for marginalized populations, moving away from neoliberal economic models, and expanding the role of the state in social welfare provision.[24] Sheinbaum's own agenda can be visualized through her National Development Plan to be implemented from 2025 to 2030 published on April 15, 2025.[25] In it, her administration diagnoses the current situation, and proposes objectives, strategies and priorities relating to education, health, labor, security and sustainability in order to stimulate development.[26]

---

[19] BBC News ibid.
[20] Vivis V, The Impacts of Spanish Colonialism on the Socioeconomic Status of the Indigenous Community in Mexico, Intro to Comparative Government and Politics (Claremont Colleges Pressbooks), https://pressbooks.claremont.edu/id001p012/chapter/vivis-chapter/ accessed 15 July 2025.
[21] Esponda I and Esponda I, 'Inequality in Mexico', (UNU-WIDER) https://www.wider.unu.edu/publication/inequality-mexico-0 accessed 15 July 2025.
[22] Helfgott A, 'The Structure of Mexico's Government – Explainer' (Wilson Center, 24 October 2023) https://www.wilsoncenter.org/article/structure-mexicos-government-explainer accessed 15 July 2025.
[23] Felbab-Brown V and Paz García D, 'Mexico, López Obrador, and Sheinbaum's Presidential Victory' (Brookings, 10 June 2024) https://www.brookings.edu/articles/mexico-lopez-obrador-and-sheinbaums-presidential-victory/ accessed 15 July 2025.
[24] Martínez Espinoza, Manuel I. "La política social de la cuarta transformación en México. Un balance del primer año de gobierno de López Obrador." Revista Española de Ciencia Política, no. 55, March 2021, pp. 121–142, https://doi.org/10.21308/recp.55.05.
[25] Gobierno de México, *Plan Nacional de Desarrollo 2025–2030* (Presidencia de la República/SNIEG, April 2025), https://www.gob.mx/cms/uploads/attachment/file/966672/pnd-completo-2025-2030.pdf
[26] Gobierno de México, Plan Nacional de Desarrollo 2025–2030, https://www.gob.mx/bienestar/documentos/plan-nacional-de-desarrollo-2025-2030-388018, accessed 15 July 2025.

Currently, Mexico contributes 1.28% to global greenhouse gas emissions (GHG) emissions[27] and ranks #72 in climate vulnerability[28] and #86 in human development, according to the United Nations Development Programme (UNDP).[29] As a result, Mexico has been a member of the Nationally Determined Contributions (NDCs) Partnership to the Paris Agreement since 2017.[30] In 2022 their commitment was updated to an unconditional emissions reduction of 35% (up from 22% in 2020) and a conditional target of 40% (up from 36%) by 2030 if external support is secured.[31]

Air Pollution

Mexico has one of the highest and most deadly rates of air pollution in the world, linked to an estimated 33,000 deaths per year, almost 20,000 of which are from outdoor air pollution focused around cities.[32] Particulate Matter (PM) comes in different varieties based on the diameter of the particles, with PM2.5 posing a particular threat to health and the environment due to it being able to more easily penetrate instruments (such as lungs) as a result of its size.[33] In Mexico, PM2.5 is mainly emitted by exhaust fumes and has concentrations in between 18.9 and 20.3 micrograms per square metre.[34] This is double the World Health Organization's (WHO) recommended limit of 10 micrograms per square metre.[35]

Mexico City, being the country's most populous city, is home to some of the worst air quality in the country, not least due to congestion. In fact, the city's congestion, in addition to continued urban expansion and population growth, has been directly linked to increasing greenhouse gas emissions, including Carbon Monoxide (CO),

[27] World Resources Institute, 'Climate Watch (CAIT): Country Greenhouse Gas Emissions Data' (10 April 2014) https://www.wri.org/data/climate-watch-cait-country-greenhouse-gas-emissions-data accessed 15 July 2025.
[28] University of Notre Dame, 'Notre Dame Global Adaptation Initiative (ND-GAIN) Country Index' https://gain.nd.edu/our-work/country-index/ accessed 15 July 2025.
[29] United Nations Development Programme (UNDP), 'Human Development Index (HDI)' https://hdr.undp.org/data-center/human-development-index#/indicies/HDI accessed 15 July 2025.
[30] NDC Partnership, 'Mexico' https://ndcpartnership.org/country/mex accessed 15 July 2025.
[31] United Nations Development Programme (UNDP), 'Climate Promise: Mexico' (21 November 2023) https://climatepromise.undp.org/what-we-do/where-we-work/mexico accessed 15 July 2025.
[32] Copenhagen Consensus Center, **Mexico Perspective: Air Pollution** (Copenhagen Consensus, [n.d.]) https://copenhagenconsensus.com/publication/mexico-perspective-air-pollution accessed 1 July 2025.
[33] California Air Resources Board, *Inhalable Particulate Matter and Health* (CARB, [n.d.]) https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health accessed 10th of July, 2025.
[34] Eric Koons, 'Air Pollution in Mexico' *Climate Impacts Tracker* (30 May 2024) https://www.climateimpactstracker.com/air-pollution-in-mexico/ accessed 1 July 2025.
[35] Koons ibid.

Carbon Dioxide (CO2), Nitrogen Oxides (NOx), and other pollutants[36] (with vehicles being responsible for 86% of CO and 86% of NOx emissions).[37] PM2.5 emissions, over 50% of which are linked to vehicle emissions, are concentrated at about 25 micrograms per square metre, and cause an estimated 6,700 premature deaths a year in the city.[38] Other airborne pollutants present in Mexico City have been found to add to illnesses, including respiratory infections and cardiovascular disease[39]; and in 2008 overall emissions caused by gasoline combustions were calculated to cause 14,000 premature deaths.[40]

Similar results are found in other major population centers around Mexico. In Monterrey (population of 5.3 million) municipalities with higher concentrations of PM2.5 and PM10 were linked with higher mortality rates.[41] The same pollutant concentrations and mortality for those aged 60+ were especially high on significantly hotter days (temperature 25% hotter than the previous day).[42] In Guadalajara (population of 5.2 million) local concentrations of PM2.5, PM10, NOx, and CO were all found to have a higher correlation with mortality than COVID infections.[43] In Tijuana (population of 2.3 million) the presence of CO and NOx were linked to increases in lung cancer,[44] and the city's air pollution has also been found to affect Tijuana river

---

[36] Rene Franco, *Analysis of Mexico City transportation systems to address climate change, traffic, social equity, safety, and air pollution health risks* (Master's thesis, University of San Francisco, May 2021) https://repository.usfca.edu/capstone/1207 accessed 14 June 2025.

[37] James Adam Mahady, Claudia Octaviano, Oscar Sebastián Araiza Bolaños et al., 'Mapping Opportunities for Transportation Electrification to Address Social Marginalization and Air Pollution Challenges in Greater Mexico City',(*Environmental Science & Technology*, vol. 54, no. 4, 7 January 2020), pp. 2103–2111, https://doi.org/10.1021/acs.est.9b06148 accessed 30 June 2025.

[38] C40 Cities, (*Mexico City – Regulating Industrial Emissions*, February 2022), https://www.c40.org/wp-content/uploads/2022/02/Mexico-City-%E2%80%93-Regulating-Industrial-Emissions-English.pdf(accessed 30 June 2025.

[39] Isaac Schifter, Luis Díaz and Esteban López-Salinas, 'Hazardous Air Pollutants from Mobile Sources in the Metropolitan Area of Mexico City', (*Journal of the Air & Waste Management Association*, vol. 55, 2 March 2021) pp. 1289–1297.

[40] Ioannis Chatziioannou, Luis Alvarez-Icaza, Efthimios Bakogiannis, Charalampos Kyriakidis and Luis Chias-Becerril, 'A CLIOS Analysis for the Promotion of Sustainable Plans of Mobility: The Case of Mexico City', (*Applied Sciences*, vol. 10, no. 13 1 July 2020), article 4556, https://doi.org/10.3390/app10134556 accessed 1 July 2020

[41] Rosa María Cerón Bretón, Julia Griselda Cerón Bretón, Jonathan W. D. Kahl *et al.*, "Short-Term Effects of Atmospheric Pollution on Daily Mortality and Their Modification by Increased Temperatures Associated with a Climatic Change Scenario in Northern Mexico" (*International Journal of Environmental Research and Public Health*, vol 17 no 24, 10th of December, 2020) 9219, https://doi.org/10.3390/ijerph17249219 accessed 11th of July, 2025

[42] Cerón Breton ibid.

[43] Elizabeth Torres-Anguiano, Itzel Sánchez-López, Angeles Garduño-Robles *et al.*, 'SARS-CoV-2: Air pollution highly correlated to the increase in mortality. The case of Guadalajara, Jalisco, México' (*Infectious Disease Modelling*, vol 8 no 2, 1st of June, 2023) 445–57, https://doi.org/10.1016/j.idm.2023.04.004 accessed 11th of July, 2025.

[44] Gustavo López Badilla, Montserrat Lujan De Leon, Gerardo Vigil Rendón *et al.*, 'Correlation Analysis of the Effect of Atmospheric Factors on the Negative Effect on the Health of the Population of Tijuana,

pollution, leading to further transboundary pollution as the river flows into the United States.[45]

Mexico City's climate change-accelerated consequences are also found to disproportionately affect the approximately 40% of the city's citizens living below the poverty line.[46] The geographic presence of airborne pollutants—especially PM10 and PM20.5—is negatively correlated to the geographic wage distribution of the city, a relationship that is aggravated by poorer citizens' increased difficulty to reach proper medical attention.[47] This trend goes beyond Mexico City's borders, as satellite image analyses show increases in PM2.5 concentrations in localities with decreasing wage averages, theorized to be due to a combination of highway and industry pollutants being more often located in poorer districts.[48] Such patterns especially affect Sheinbaum and her voter base which skews significantly to lower wage brackets.[49] In the 2024 presidential elections, 65% of voters earning less than $10,000 MXN per month voted for Sheinbaum, followed by 59% of voters earning between $10,000 and $15,000, and 62% of those earning between $15,000 and $25,000.[50] The average negative correlation between wages and Sheinbaum's voter share displays a particular interest for Sheinbaum to heed the interests of lower wage classes in her policies to assure continued support, including environmental policies.[51]

Baja California, Mexico' (*Asian Journal of Basic Science & Research*, vol 5 no 1, January–March 2023) 67–75, https://doi.org/10.38177/AJBSR.2023.5108 accessed 11th of July, 2025.

[45] Benjamin Rico, Kelley Barsanti, William Porter *et al.*, 'Heavily Polluted Tijuana River Drives Regional Air Quality Crisis' (*preprint*, chemRxiv, December 2024) DOI: 10.26434/chemrxiv-2024-mjgbr accessed 11th of July, 2025.

[46] María Eugenia Ibarrarán, 'Climate's Long-term Impacts on Mexico's City Urban Infrastructure' in *Cities and Climate Change: Global Report on Human Settlements 2011* (UN-HABITAT 2011) https://unhabitat.org/sites/default/files/2012/06/GRHS2011CaseStudyChapter04Mexico.pdf accessed 14 June 2025.

[47] Lilian Calderón-Garcidueñas and Ricardo Torres-Jardón, 'Air Pollution, Socioeconomic Status, and Children's Cognition in Megacities: The Mexico City Scenario', (*Frontiers in Psychology*, vol. 3, 9 July 2012) article 217, https://doi.org/10.3389/fpsyg.2012.00217 accessed 30 June 2025.

[48] Lopamudra Chakraborti, John Voorheis, 'Is air pollution increasing in poorer localities of Mexico? Evidence from PM 2.5 satellite data' (*Environment and Development Economics*, first published online 16th of October, 2024; pages 52–69, vol 30) https://doi.org/10.1017/S1355770X24000251 accessed 11th of July, 2025.

[49] Viri Ríos, 'Five reasons why Sheinbaum won in Mexico' *El País* (10 June 2024) https://english.elpais.com/international/2024-06-10/five-reasons-why-sheinbaum-won-in-mexico.html accessed 20 June 2025.

[50] Montse Hidalgo Pérez, Patricia San Juan Flores and Kiko Llaneras, '¿Quién ha votado a Sheinbaum? ¿Y a Gálvez? Sus apoyos por edad, sexo e ingresos' *El País* (3 June 2024) https://elpais.com/mexico/elecciones-mexicanas/2024-06-03/quien-ha-votado-a-sheinbaum-y-a-galvez-sus-apoyos-por-edad-sexo-e-ingresos.html accessed 20 June 2025.

[51] Ríos (n 33).

Water Scarcity & Biodiversity Loss

A growing concern for Mexico that has been flamed by climate change has been the country's water crisis. The Falkenmark Index defines water stress as being present in any area with less than 1700 cubic meters of water available per person.[52] Despite approximately 3600 cubic meters of water being available per person nationally, this figure conceals a significant geographical disparity between the wetter southern regions and the drier northern regions (the latter of which only have an estimated 1520 cubic meters per person).[53] Water availability has reportedly decreased by nearly 30% in the past three decades,[54] likely due to the increasing occurrence of droughts, unpredictable precipitation patterns, and continuously increasing population.[55] The Water Insecurity Experience Scale (WISE) uses a questionnaire to estimate the water security of households through questionnaires assessing accessibility to fundamental water resources.[56] According to WISE, over 30% of households in certain regions face water scarcity (the most drastic example being Guerrero), while others only report 3%.[57]

The water resources that are available are subject to mismanagement by the private and public sectors. Up to 76% of clean water in the entire country is consumed by the agriculture sector, which ends up reportedly wasting up to 70% of said water.[58] About 40% of the water that is wasted is due to pipe leaks by inefficient and unmaintained networks.[59] Furthermore, as of the beginning of 2025, the Public Water Rights Registry reveals over 550,000 water concession holders in Mexico, over 20% of which are for industrial use.[60] Industrial activities consuming water are also expected to increase by 15% by 2030 if left unchecked.[61]

---

[52] Silvana Pacheco-Treviño and Mario Guadalupe Francisco Manzano-Camarillo, 'Review of water scarcity assessments: Highlights of Mexico's water situation' (2024) *WIREs Water* https://doi.org/10.1002/wat2.1721 accessed 6 June 2025.
[53] Pacheco-Treviño ibid.
[54] Pachecho-Treviño ibid.
[55] Nicholas P Sisto, Aldo I Ramírez, Ismael Aguilar-Barajas and Víctor Magaña-Rueda, 'Climate threats, water supply vulnerability and the risk of a water crisis in the Monterrey Metropolitan Area (Northeastern Mexico)' (2015) *Revista Mexicana de Estudios Regionales* http://hdl.handle.net/11285/630635 accessed 13 June 2025.
[56] Sera L. Young et al., *Cuernavaca Press Release: Water Insecurity in Mexico* (Northwestern University, 3 March 2025) https://buffett.northwestern.edu/documents/cuernavaca_press_release_english_v5.pdf accessed 13 June 2025.
[57] Young ibid.
[58] *Water Management and Industrial Development in Mexico: A Strategic Overview* (Prodensa, 1 April 2025) https://www.prodensa.com/insights/blog/water-management-and-industrial-development-in-mexico-a-strategic-overview accessed 12 June 2025.
[59] Prodensa ibid.
[60] Prodensa ibid.
[61] Prodensa ibid.

Out of the water that is available in the country, over half of all surface water is considered contaminated (mostly due to agricultural discharge), and around 8% of underwater sources show signs of contamination.[62] Of all the contaminated sources, 20% are believed to be due to industry activity, especially the mining and petrochemicals sector.[63] The water crisis also has a socioeconomic dimension, as scarcity disproportionately affects poorer rural communities, whom the agriculture sector and concession title holders divert most water from.[64] The contaminated water often leads to health issues which are also disproportionally harmful to poorer communities that have less access to quality healthcare.[65] Additionally, water related natural disasters, including droughts and floods, have shown to be unequivocally fatal to rural towns,[66] particularly in Northern regions during summer months (local wet season).[67] These variables make water insecurity a necessary issue to tackle by the federal government, but also an attractive one to Morena, a labour party, and Sheinbaum herself.

Increasingly unpredictable weather patterns are also affecting decreasing biodiversity in Mexico, alongside other climate change-accelerated consequences and population growth.[68] While the state hosts approximately 10% of all unique species in the world, several animal and plant species have become extinct only in the past century, including 70 vertebrate species.[69] Due to this, special attention has been placed in introducing federal, regional, and local institutions to protect particularly vulnerable species and areas through wildlife and biosphere reserves.[70] Some reserves have found success in maintaining environmental health and biodiversity while also offering economic opportunity under strong local leadership, like in the case of Sierra Gorda.[71] This success is not universal to all reserves,

[62] Pacheco-Treviño (n 36).
[63] Prodensa (n 42).
[64] Alyssa Huberts, David Palma, Ana Cecilia Bernal García, Faith Cole, and Elizabeth F. S. Roberts, 'Making scarcity "enough": The hidden household costs of adapting to water scarcity in Mexico City' (2023) 2 *PLOS Water* e0000056 https://doi.org/10.1371/journal.pwat.0000056.
[65] Huberts ibid.
[66] Sisto (n 39).
[67] Pacheco-Treviño (n 36).
[68] Josie Garthwaite, 'Researchers identify human activities as drivers of biodiversity decline in central Mexico's reserves' (*Phys.org*, 15 February 2024) https://phys.org/news/2024-02-human-drivers-biodiversity-decline-central.html accessed 6 June 2025.
[69] Gerardo Ceballos, and Andres Garcïa, 'Challenges and Opportunities for Conservation in of Mexican Biodiversity' (1 January 2013) *Conservation Biology: Voices from the Tropics* 105-112
[70] Ludger Brenner, 'Multi-stakeholder Platforms and Protected Area Management: Evidence from El Vizcaíno Biosphere Reserve, Mexico' (2019) 17(2) *Conservation & Society* 147–160
[71] Once threatened, Mexico's "green jewel" has become a model of conservation' (15 August 2023) *UNEP* https://www.unep.org/news-and-stories/story/once-threatened-mexicos-green-jewel-has-become-model-conservation accessed 30 May 2025.

however, with 14 such reserves in Central America facing continued species extensions (especially in the case of plant species), several of them being in Mexico.[72]

Fossil Fuels & Energy

Mexico is primarily dependent on natural gas (mainly imported) for domestic consumption,[73] it relies economically on oil exports, and suffers direct consequences of climate change.[74] Approximately 25% of the energy mix is made up of clean energy sources, and 75% are fossil fuels.[75]

This imbalance underscores a critical energy paradox: Mexico's reliance on fossil fuels persists even as the country confronts mounting climate vulnerability. The current challenge lies in balancing Mexico's role as the fourteenth-leading net exporter of oil, with declining production,[76] while simultaneously meeting its growing energy demand (25% increase since 2000), and upholding their international pledge to reduce emissions.[77]

Energy affordability adds another layer of complexity. The average electricity price in Mexico rose from $119.52 USD/MWh in 2022 to $151.60 USD/MWh in 2023, marking the highest point in a fluctuating trend.[78] As of September 2024, household electricity prices stood at ¢10.3 U.S. cents per kilowatt-hour, up from ¢8.2 cents at the end of 2020.[79] Despite this steady rise, Mexico remains among the countries with the lowest residential electricity prices globally.[80]

---

[72] Garthwaite (n 50).
[73] MBN Staff, 'Mexico's Gas Dependence vs Renewable Potential: Ember' (*Mexico Business News*, January 2025) https://www.mexicobusiness.news/energy/news/mexicos-gas-dependence-vs-renewable-potential-ember accessed 14 June 2025.
[74] Brandon Novick, 'The Unavoidable Crisis: Climate Change in China and Mexico' (June 2021) 12(1) *Global Majority E-Journal* 41 https://www.american.edu/cas/economics/ejournal/upload/global_majority_e_journal_12_1_novick.pdf accessed 13 June 2025.
[75] Ember. Mexico. Ember Energy. Published April 2025.
[76] Organisation for Economic Co-operation and Development. "Mexico – Inventory of Support Measures for Fossil Fuels." OECD Inventory of Support Measures for Fossil Fuels, OECD, June 2020.
[77] Eweade, B. S., Karlilar, S., Pata, U. K., Adeshola, I. & Olaifa, J. O. "Examining the asymmetric effects of fossil fuel consumption, foreign direct investment, and globalization on ecological footprint in Mexico", Sustainable Development, vol. 32, no. 4, 2024, pp. 2899–2909.
[78] BloombergNEF, Mexico – Climatescope 2024, Global Climatescope, 2024, https://www.global-climatescope.org/markets/mexico accessed 14 July 2025.
[79] Statista, Household electricity price in Mexico from October 2020 to September 2024 (U.S. cents per kWh), Statista, accessed 14 July 2025, https://www.statista.com/statistics/1372387/household-electricity-price-mexico/.
[80] Statista, Electricity prices in selected countries (USD cents per kWh), Statista, https://www.statista.com/statistics/263492/electricity-prices-in-selected-countries/, accessed 14 July 2025.

Meanwhile, environmental indicators reflect the costs of this fossil-heavy model. Mexico registered 175.2 MtCO2 total emissions in 2024.[81] In 2021, Mexico revised its Nationally Determined Contributions (NDCs) to raise its greenhouse gas emissions reduction target from 22% to 30% by 2030[82] and 50% GHG reduction (from 2000 levels) by 2050.[83] Although decarbonization progress in the power sector is widely studied, Mexico's specific case remains underexplored in the literature.[84] Instead, researchers, using scenario modeling, found that under high energy demand, no optimized portfolio meets the 2050 emissions target of 43.9 Mt CO_2eq/year.[85]

Despite this scientific warning, public investment patterns continue to support fossil infrastructure. Continuously, the federal budget is allocated to oil refineries such as the "Dos Bocas" in Tabasco[86]—expected to emit 2.1 MtCO2e per year[87]—or the Federal Electricity Commission (CFE, in Spanish), invested in the "modernisation" of coal, diesel, oil and gas power plants."[88]

This approach is shaped in part by a political shift that began in 2013 with an energy reform implemented under President Enrique Peña Nieto. This redefined PEMEX and the CFE as "productive state enterprises" giving them more autonomy while still remaining public.[89] The aim was to attract national and international investment following the decline in PEMEX's oil production. In 2018, upon taking office, AMLO reversed key components of the 2013 reform under the reasoning that it prioritized

[81] Ember. Mexico. Ember Energy. Published April 2025.
[82] Estado de Sonora. Plan Sonora: Energías Sustentables y Economía de Prosperidad Compartida. Gobierno del Estado de Sonora, 10 Feb. 2025, https://www.gob.mx/cms/uploads/attachment/file/977416/Plan_Sonora_Dif_100225_Red_100225_compressed.pdf accessed 15 June 2025.
[83] Mexico, Programa Especial de Cambio Climático 2021–2024, Secretaría de Medio Ambiente y Recursos Naturales, published in Diario Oficial de la Federación 8 Nov. 2021, https://www.gob.mx/semarnat/documentos/programa-especial-de-cambio-climatico-2021-2024 accessed 15 June 2025.
[84] Probst, O. "Clean Energy and Carbon Emissions in Mexico's Electric Power Sector: Past Performance and Current Trend." Energies, vol. 17, no. 23, 22 Nov. 2024, article 5859.
[85] Sandoval García ER and Morales-Acevedo A, 'Optimizing the Energy Portfolio of the Mexican Electricity Sector by 2050 Considering CO_2eq Emissions and Life Cycle Assessment' (2014) 57 Energy Procedia 137–146 https://doi.org/10.1016/j.egypro.2014.10.160.
[86] Gantz, David A. "AMLO's Energy and Investment Policies Will Make Mexico Poor Again." Baker Institute Blog, Rice University, 4 Aug. 2022, https://www.bakerinstitute.org/research/amlos-energy-and-investment-policies-will-make-mexico-poor-again accessed 15 June 2025.
[87] K García, 'Various NGOs Demand Review of Energy Sector Policy' El Economista (18 June 2020) https://www.eleconomista.com.mx/empresas/Varias-ONG-exigen-revision-de-politica-sectorial-energetica-20200618-0012.html accessed 12 June 2025.
[88] Climate Action Tracker, 'Mexico: Policies & Action' (12 December 2022) https://climateactiontracker.org/countries/mexico/policies-action/ accessed 6 June 2025.
[89] Gobierno de México, Explicación ampliada de la Reforma Energética, Gobierno de México, https://www.gob.mx/cms/uploads/attachment/file/10233/Explicacion_ampliada_de_la_Reforma_Energetica1.pdf, accessed 14 July 2025.

private interests over the public good.[90] This nationalist framework emphasized "energy sovereignty" by having the state reassert control over the energy sector, particularly through PEMEX and the CFE.[91] The components that were cancelled were energy auctions, regulatory agencies were weakened or bypassed, and investment in private renewable energy sources were redirected towards refineries, gas plants, and CFE-led infrastructure.

Yet despite these institutional barriers, the potential for renewable energy remains immense. Generation holds large capacities in solar, geothermal, and wind sources. With the highest potential generator being solar photovoltaics with a generation of 24,918 GW, 2.5 GW could be extracted from conventional geothermal sources and 3,669 GW of wind - creating a combination that could meet the country's electricity needs a hundred times over.[92] Mexico has seen "growth in renewable electricity generation from wind and solar, which almost tripled from 2015 to 2022."[93] Plus, between 2000-2023, crude oil production decreased 40%.[94] In the end, difficulty lies in balancing Mexico's dependence on fossil fuels and its potential for renewable energy, raising questions about how it can meet climate goals while maintaining economic stability, energy, and affordability.

Political Stakes

Beyond the environmental consequences Mexico and its population are facing, it is equally as prudent to understand the political history and context that surrounds Sheinbaum's policy making. Since becoming a genuine democracy at the turn of the millennium with the end of the dominant party system,[95] Mexico's environmental policy has been slow to develop, exemplified by being the only OECD or G20 nation

[90] Wilson Center, La nueva reforma energética de México, Wilson Center, https://www.wilsoncenter.org/sites/default/files/media/documents/publication/la_nueva_reforma_energetica_de_mexico.pdf, accessed 14 July 2025.
[91] Wilson Center, La nueva reforma energética de México, Wilson Center, https://www.wilsoncenter.org/sites/default/files/media/documents/publication/la_nueva_reforma_energetica_de_mexico.pdf, accessed 14 July 2025.
[92] International Trade Administration, Mexico: Renewable Energy, Country Commercial Guides, https://www.trade.gov/country-commercial-guides/mexico-renewable-energy, accessed 14 July 2025.
[93] International Trade Administration ibid.
[94] International Energy Agency, Mexico, International Energy Agency, accessed 12 June 2025, https://www.iea.org/countries/mexico.
[95] *Council on Hemispheric Affairs*, 'Democracy in Mexico: The Past, Present, and Future', (*Council on Hemispheric Affairs*, 18 July 2011) https://coha.org/democracy-in-mexico-the-past-present-and-future/ accessed 30 June 2025.

without a net zero goal.[96] Between 1994 and 2018, federal focus on tackling climate change was rarely prompted. Reports showed that within that time frame, the multiple PRI and Partido Acción Nacional (PAN) presidents only highlighted environmental action as a political goal when prompted by international agreements developed at the time.[97] During his third overall (and first successful) run for the presidency, López Obrador was expected to be the first Mexican president to prioritize environmental policy,[98] but investment into the fossil fuel industry and the dissolution of independent environmental offices raised worries among international observers that economic interests would be prioritized over environmental goals.[99]

Due to their prior close political collaboration,[100] Sheinbaum was accused by political rivals and publications of acting as a "puppet"[101] to López Obrador since announcing her intention to run for president.[102] Despite having shown political independence while governing Mexico City with her differing confrontation of the COVID-19 pandemic,[103] López Obrador's influence over Morena leaves room for doubt over whether Sheinbaum will be able to make her own name, especially in the field of environmental politics.[104] Sheinbaum has mocked these accusations and attempted to maintain her independence while pledging to continue the 'Fourth Transformation'

---

[96] Rebecca Conan, 'Mexico's Net Zero Goal Pending Ahead of COP 28', (*Argus Media*, 22 November 2023) https://www.argusmedia.com/en/news-and-insights/latest-market-news/2512150-mexico-s-net-zero-goal-pending-ahead-of-cop-28 accessed 30 June 2025.

[97] Alturo Balderas Torres, Priscila Lazaro Vargas, and Jouni Paavola, 'The systemic and governmental agendas in presidential attention to climate change in Mexico 1994–2018' (2020) 11 *Nature Communications* 455 https://doi.org/10.1038/s41467-019-14048-7

[98] César Martínez, 'Destaca propuesta ambiental de AMLO' (*El Norte*, 16 May 2018) https://www.elnorte.com/aplicaciones/articulo/default.aspx?id=1395649 accessed 14 June 2025.

[99] CAT (n 52).

[100] Ana Isabel Martínez, 'Mexico's Sheinbaum may be no puppet but her mentor looms large' (Reuters, 27 May 2024) https://www.reuters.com/world/americas/mexicos-sheinbaum-may-be-no-puppet-her-mentor-looms-large-2024-05-27/ accessed 6 June 2025.

[101] Ciara Howard, 'Latin Analysis: Claudia Sheinbaum, AMLO's Puppet or Foreign Policy Progressive?' (*Modern Treatise*, 30 January 2025) https://www.moderntreatise.com/the-americas/2025/1/16/latin-analysis-claudia-sheinbaum-amlos-puppet-or-foreign-policy-progressive accessed 14 June 2025.

[102] Raoul Lowery Contreras, 'Mexico's First Woman President Sadly Appears to Be a Puppet of Her Predecessor' (*Times of San Diego*, 30 September 2024) https://timesofsandiego.com/opinion/2024/09/30/mexicos-first-woman-president-sadly-appears-to-be-a-puppet-of-her-predecessor/ accessed 14 June 2025.

[103] Viri Ríos, 'How Claudia Sheinbaum Will Be Different From AMLO' (*Americas Quarterly*, 4 June 2024) https://www.americasquarterly.org/article/how-claudia-sheinbaum-will-be-different-from-amlo/ accessed 6 June 2025.

[104] Sienna Drew, 'Claudia Sheinbaum: Trailblazer or Mexico's Next Puppet Leader?' (*Moment Magazine*, 31 May 2024) https://momentmag.com/claudia-sheinbaum-mexican-election/ accessed 14 June 2025.

begun by her predecessor.[105] Worth noting is the relative fragility of Mexico's young democracy, demonstrated by the volatility of its political agents and parties, requiring Sheinbaum to balance her own priorities and those of the even younger Morena, which is enjoying massive popularity nationally but faces internal rifts.[106]

Internationally, Mexico is also expected to fall in line with the international agreements and climate goals it entered into before Sheinbaum became president. Core among them is the Paris Climate Agreement, which Mexico signed in 2015 and was credited as being an "active participator" during its negotiations.[107] The Paris agreement includes a 2030 goal of reducing greenhouse emissions by 36% compared to what they would have otherwise been, and a 51% decrease for black carbon.[108] In addition, the United Nations SDG 2030 goals also present a method for quantifying whether Mexico's climate situation is improving; before Sheinbaum's inauguration Mexico was identified as slow to incorporate said goals since they came into effect.[109] Ironically, Sheinbaum had released an article prior to governing Mexico City criticizing the SDG goals for what she identified as a lack of focus on scientific development, dismissing a collaborative relationship between developed and developing countries, and writing certain goals in a way where they compete with each other for resources.[110]

As a labour party president, Sheinbaum's climate policy agenda has placed an unprecedented emphasis on intersectionality where previous Mexican administrations' climate and energy policies had not[111]. According to Patricia Hill Collins, a prominent scholar who expanded critical theory and public policy

---

[105] La Octava Digital, 'Sheinbaum: AMLO no tendrá teléfono rojo desde Palenque para dar instrucciones' (Facebook, 27 May 2024) https://www.facebook.com/laoctavadigital/videos/sheinbaum-amlo-no-tendrá-teléfono-rojo-desde-palenque-para-dar-instrucciones/1223384912431797/ accessed 14 June 2025.

[106] Germán Petersen and Fernanda Somuano, 'Mexican De-democratization? Pandemic, Hyper-Presidentialism and Attempts to Rebuild a Dominant Party System' (2021) 41(2) *Revista de Ciencia Política* 353–376 https://www.scielo.cl/scielo.php?pid=S0718-090X2021000200353&script=sci_arttext.

[107] Secretaría de Relaciones Externales, *Mexico joins in approving landmark climate accord in Paris* (Gobierno de México, 13 December 2015) https://www.gob.mx/sre/fr/prensa/mexico-joins-in-approving-landmark-climate-accord-in-paris accessed 13 July 2025.

[108] Climate Action Tracker (n 62).

[109] Laura Dowley, "Mexico and the Sustainable Development Goals," *openDemocracy* (democraciaAbierta), 22 March 2019, https://www.opendemocracy.net/en/democraciaabierta/mexico-and-sustainable-development-goals/

[110] Mariana Imaz and Claudia Sheinbaum, 'Science and Technology in the Framework of the Sustainable Development Goals' (2017) 14(1) *World Journal of Science, Technology and Sustainable Development* 2–17 https://doi.org/10.1108/WJSTSD-04-2016-0030.

[111] Johan Galtung, *Peace by Peaceful Means: Peace and Conflict, Development and Civilization* (London: SAGE Publications, 1996).

discourse, an intersectional approach considers the compound effects of multiple forms of marginalization, aiming to create more inclusive and equitable outcomes across diverse social groups.[112] Within the Mexican 2025-2030 National Development Plan, sustainable development is combined with rights of indigenous and afro-mexican communities.[113] From reiterating the importance of preserving the country's sovereignty, to investing in water, renewables, restorations, and state-owned enterprises, proposed climate action is politically influenced.[114] This represents a sharper sensitivity to sustainability compared to the previous administrations, though limited performance indicators and ongoing fossil fuel reliance undermine its overall progress.

Sheinbaum's inclusive vision links clean energy with rural development and equity, but "major contradictions threaten these goals."[115] For instance, BBVA Research has found that oil expansion, subsidy persistence, and fiscal constraints threaten climate goals unless cross-sector alignment and measurable implementations improve.[116] Thus, the policy preferences that simultaneously resemble and diverge from her predecessors play a role in the outcome of her performance.

Another crucial factor is her relationship with the United States and how this limits her choices at times. Throughout the last century, the United States and Mexico have collaborated closely on policy. These two states share one of the strongest trade relationships in the world, underwritten by the USMCA, signed first in 2000 by the United States, Mexico and Canada, and renegotiated recently. Sheinbaum has expressed it to be "one of the best trade deals in history, it benefited the three countries."[117] Plus, Sheinbaum has stressed that "Mexico will have a 'good' relationship with Trump."[118] Together, this illustrates Sheinbaum's willingness to cooperate with her neighboring state, despite potential differences, in order to reap the potential benefits. The United States and Mexico also share natural resources along Mexico's northern border. Representatively, sharing water has been possible

[112] Collins P H and others, 'Intersectionality as Critical Social Theory' (2021) 20 Contemporary Political Theory 690 https://doi.org/10.1057/s41296-021-00490-0 accessed 15 July 2025.
[113] Gobierno de México, *Plan Nacional de Desarrollo 2025–2030* (Presidencia de la República/SNIEG, April 2025), https://www.gob.mx/cms/uploads/attachment/file/966672/pnd-completo-2025-2030.pdf
[114] Gobierno de México ibid..
[115] Marco Lara, "Sostenibilidad Ambiental en el Plan Nacional de Desarrollo 2025–2030: un Análisis," BBVA Research, 26 May 2025, https://www.bbvaresearch.com/wp-content/uploads/2025/05/PND-Sostenibilidad-ambiental.pdf
[116] Lara ibid.
[117] Murray (n 75).
[118] Murray (n 75).

through the basis of the 1944 Water Treaty in spite of conflicts due to overuse, pollution, and climate-driven drought.[119]

Nevertheless, this relationship is undergoing an impasse due to clashes between the Trump and Sheinbaum Administrations' goals. Mainly, the United States blames Mexico for allegedly permitting the movement of illegal migration and drug trafficking.[120] Additionally, the Trump administration shows concern for the level of Chinese influence on manufacturing and nearshoring in Mexico.[121] As a result, the Trump administration imposed 25% tariffs on Mexican imports,[122] renewed blanket tariffs on Mexican steel and aluminum, and threatened broader trade penalties.[123]

In response to the concerns over security, Sheinbaum deployed the national guard, ramped up fentanyl crackdowns, and extradited cartel leaders to the United States.[124] Regarding China, imposing tariffs on the state has been proposed in order to appease the Trump Administration.[125] This directly relates to Mexico's hopes of increasing the job creation and industrial investment generated by companies looking to distance themselves from China.[126] More generally however, these points of contention between the United States and Mexico create economic uncertainty that restrict investments. Resources could be diverted to buffer trade shocks or continue to appease US demands.[127] Hence, this menaces Sheinbaum's emphasis on sovereignty in her environmental agenda as Trump's security resource-intensive requests have overridden climate spending.[128]

Sheinbaum's Defining Moment

A defining moment is a particular point in a leader's life which sets the course for their focus on environmental policy, ultimately leading to them becoming a climate

[119] Hussain, M. "US–Mexico Water Conflict: A Study of Climatic Implications for the Central American Region." Journal of Social Sciences Review, vol. 4, no. 4 (Fall 2024), pp. 224–233, doi:10.62843/jssr.v4i4.449.
[120] Christine Murray & Ilya Gridneff. "Mexico Pledges to Shrink Trade Deficit with China in Nod to Donald Trump." Financial Times, 4 Feb. 2025.
[121] Murray (n 75).
[122] Christine Murray & Ilya Gridneff ibid.
[123] Maihold, Günther. "Mexico – From a Short Nearshoring Boom to U.S. 'Security-Shoring'." SWP Comment, no. 2025/C 23, Stiftung Wissenschaft und Politik, 27 May 2025, doi:10.18449/2025C23.
[124] Murray (n 75).
[125] Marroquín Bitar, Diego, "Is USMCA Good for Mexican Labor? A Preliminary Analysis of USMCA and Labor Market Outcomes in Mexico" (2024) 49 Brooklyn Journal of International Law 542 https://brooklynworks.brooklaw.edu/bjil/vol49/iss2/5 accessed 16 June 2025.
[126] Marroquín Bitar ibid.
[127] Maihold (n 75).
[128] Christina DeConcini, Jennifer Rennicks and Gabby Hyman. World Resources Institute. "Climate Action Opportunities and Setbacks Under Trump." World Resources Institute Insights, 13 Nov. 2024, https://www.wri.org/insights/trump-climate-action-setbacks-opportunities-us.

leader. It is a turning point that deeply influenced their current dedication to climate action. From that point on, a figure is expected to consciously take on the role of a climate leader, committing themselves to the cause in a way that reflects their own values and perspectives.

When selecting one that effectively represented all aspects of Sheinbaum's career, it had to be an achievement of hers that presented both her scientific prowess and political abilities. The achievement also had to show significance in the field of climate change leadership, and stand as a benchmark for Sheinbaum's life, continually mentioned in any future endeavours.

Several moments were considered, as early in her career as her first doctorate degree from UNAM in 1994, significant for the sheer academic achievement, as well as the social boundaries she overcame as a woman in a male dominated field. Her latest major achievement, becoming Mexico's first female president, was also considered. However, the true defining moment this report selected is her contribution to the Intergovernmental Panel on Climate Change (IPCC) 2007 Working Group III report on the mitigation of climate change, in which she was a contributing author to Chapter 7 on Industry.[129]

The IPCC report is not like any other: it often runs thousands of pages in length and takes years to produce in order to be used by policymakers, scientists and organizations around the world. Dedicating time to this endeavour has been described as "intense", "stressful" and "unsustainable," but becomes an "academic honour."[130] Like all IPCC report authors, Sheinbaum was not paid.[131] Intrinsically, this moment is defining for a climate leader because its effects are long-term and global in nature. These reports have inspired achievements such as the formation of the United Nations Framework Convention on Climate Change (UNFCCC) and the signing of the Paris Agreement.[132]

The IPCC would go on to be awarded a Nobel Peace Prize "for their efforts to build up and disseminate greater knowledge about man-made climate change", with the

[129] Intergovernmental Panel on Climate Change, 'Chapter 7: Industry' in Bert Metz and others (eds), *Climate Change 2007: Mitigation of Climate Change. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2007) https://www.ipcc.ch/site/assets/uploads/2018/03/ar4_wg3_full_report-1.pdf accessed 13 June 2025.
[130] Tandon, Ayesha. "Analysis: How the Diversity of IPCC Author Has Changed Over Three Decades." Carbon Brief, 15 Mar. 2023.
[131] Lindwall, C. IPCC Climate Change Reports: Why They Matter to Everyone on the Planet. Natural Resources Defense Council, 24 Jan. 2022. https://www.nrdc.org/stories/ipcc-climate-change-reports-why-they-matter-everyone-planet.
[132] Ravindranath, N. H., 'IPCC: accomplishments, controversies and challenges', *Current Science*, vol. 99, no. 1, 10 July 2010, pp. 26–35 https://www.jstor.org/stable/24108347 accessed 16 June 2025.

"scientists that had contributed substantially to the preparation of [the 2007 report]" each being given a personalized certificate diploma.[133] Due to her being classified as a contributing author on this report, Sheinbaum was not given a certificate. However, her assistance to the work still presented a large shift in her career from that moment on. In 2014, Sheinbaum would go on to be a lead author in the same Industry chapter for the 2014 5th Assessment IPCC report.[134] This paper updated the information from the 2007 instalment and provided newly accrued details on the topics covered. Sheinbaum advancing from a contributing author to a leading author implies an increased devotion to the work of the IPCC, as well as perhaps a more internationally recognized authority on the subject of climate change mitigation.

While Sheinbaum had, at that point, already been a dominant figure in environmental science domestically, between her academic work and experience as Secretary of Environment, her contribution to the IPCC report and its subsequent international recognition marked her transition to an international figure years before her public prospects of becoming president. Beyond general recognition, the international nature of the team that worked on the report, with lead and contributing authors including scientists, politicians, and activists from dozens of developed and developing countries, Sheinbaum's catalogue of climate connections significantly increased. Furthermore, the IPCC being a UN-organized body symbolizes Sheinbaum's first public interactions with an intergovernmental body, especially the UN itself, presumably having a future influence on her relationships with the UN once she became president.

For the reasons mentioned above, the 2007 IPCC report represents a clear benchmark in Sheinbaum's extensive career, serving as a bridge between Sheinbaum's (mostly) domestic-based environmental and political career, and her subsequent evolution into an international figure as a continually more successful politician that places an emphasis on the environment. It highlights the achievements Sheinbaum had already attained at that point, in particular her multiple doctorates, as stepping stones to a feat some would work their entire lives to achieve. Looking into the environmental policies she would introduce while governing Mexico City, and as president of Mexico, it is possible to see an invisible string linking the thought processes behind said policies to the IPCC report itself.

---

[133] IPCC Secretariat, *Statement about the 2007 Nobel Peace Prize* (Geneva: IPCC Secretariat, 29 October 2012), https://archive.ipcc.ch/pdf/nobel/Nobel_statement_final.pdf.

[134] Intergovernmental Panel on Climate Change, *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Ottmar Edenhofer et al. (Cambridge University Press 2014) ch 10 https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter10.pdf accessed 7 June 2025.

Sheinbaum's Solutions

Mexico City Public Transport Reform

To begin inspecting the environmental policies Sheinbaum had enacted to tackle climate change, it is useful to look into one that has had ample time to be implemented and developed in order to evaluate the effectiveness of the policy. For this reason, Sheinbaum's mayoral policies for Mexico City between 2018-2024 act as a good start. Although it is uniquely densely populated and located in the central valley of the country, environmental policies implemented in Mexico City and their effects can provide insights about their possible applicability nationwide. The most prominent environmental problem in the city is arguably air pollution, worsened by the title of "the most congested city in the world"[135] Mexico City received in 2017, beating out cities like Río de Janeiro and Cairo.

In order to tackle Mexico City's congestion issue and the associated climate problems, Sheinbaum implemented a large revision of the public transportation system beginning soon after winning the mayoral elections in 2018. By the end of her term she introduced the largest fleet of electric buses in Latin America at the time to the city's bus (Metrobús) system; a total of 115 vehicles were distributed.[136] The development of these buses was aided by domestic and international firms under the Zero-Emissions Bus Rapid Deployment Accelerator (ZEBRA) Alliance with technical assistance, maximizing technological efficiency, and ensuring cost-effectiveness.[137] Studies conducted on other cities' electric bus fleets have found significant reductions in various pollutants, with each bus emitting 181 metric tonnes of CO2 less than a diesel bus, and preventing up to 3,700 premature deaths in the span of 5 years.[138] Improved air conditions by electric buses become even clearer in the long-term, as TUMI (a sustainable transportation development organized and funded by the German government) calculated that cities like Mumbai and São Paolo can save up to 35,000 kt of CO2 and 400,000 kg of black

[135] *Green Motion*, 'Mexico City Is the World's Most Traffic Congested City' (Green Motion, 2017) https://greenmotion.com/se/news/mexico-city-is-the-worlds-most-traffic-congested-city accessed 14 June 2025.
[136] Global Green Growth Institute, 'Mexico City transits to e-mobility launching 50 e-buses with the support of ZEBRA and GGGI' (GGGI, 21 February 2023) https://gggi.org/mexico-city-transits-to-e-mobility-launching-50-e-buses-with-the-support-of-zebra-and-gggi/ accessed 14 June 2025.
[137] GGGI ibid.
[138] Megan Traviss, 'The environmental and public health benefits of electric buses' (*Innovation News Network*, 9 August 2024) https://www.innovationnewsnetwork.com/the-environmental-and-public-health-benefits-of-electric-buses/50046/ accessed 14 June 2025.

carbon emissions by 2050 by continuously replacing their bus vehicles with electric alternatives.[139]

Beyond electric buses, Sheinbaum also introduced the Cablebús system, three lines of cable cars that span 25 kilometres around the city, and are focused on connecting more rural, geographically difficult areas of the city with the centre.[140] Other Mexican and Latin American cities with similar terrain that have implemented cable car systems, including Zacetecas, Chihuahua, and La Paz (Bolivia), have found success in integrating said lines into their larger public transportation system, allowing up to 570 million passengers in 10 years to travel by them, in the case of La Paz.[141] When analyzing the sustainability of cable cars, they have been found to be to be the single most effective public transportation method in terms of lowering city emissions, with the life cycle (including construction, operation, and the end-of-life phase) of a cable car having a 75% smaller carbon footprint than that of a medium-sized bus,[142] and the fully-electric variants emitting zero CO2 emissions.[143] The revitalization of the city's transportation system is effectively incorporated into other environmental programs introduced by Sheinbaum, like the solar panels implemented above Central de Abasto, which are responsible for effectively powering the fleet of new electric Metrobús vehicles.[144]

Considering the significant share of transportation in Mexico City's total emissions, Sheimbaum administered additional solutions beyond buses and cablecars, including investments in cycling infrastructure as part of a broader push for low-carbon, accessible urban mobility. As a way to promote sustainable urban transport, the "Muévete en Bici" cycling program was initially supported and then

---

[139] Hannah Behr, 'How electric buses help mitigate climate change and improve air quality in megacities: The cases of Mumbai (India) and São Paulo (Brazil)' (TUMI, 8 February 2024) https://transformative-mobility.org/electric-buses-mitigate-climate-change/ accessed 14 June 2025.
[140] Vectio, 'How a Ropeway Can Be a Sustainable Solution to Improve Urban Mobility: The Success of Cablebús in Mexico City' (Vectio, 2025) https://vectio.com/blog/how-a-ropeway-can-be-a-sustainable-solution-to-improve-urban-mobility-the-success-of-cablebus-in-mexico-city/ accessed 14 June 2025.
[141] Vectio ibid.
[142] Thomas Surrer, 'The Carbon Footprint of the Cable Car' *SI Urban* (15 November 2022) https://www.simagazin.com/en/si-urban-en/topics-urban/cities/die-co2-bilanz-am-seil-die-seilbahn-im-vergleich-zu-alternativen-verkehrsmitteln/ accessed 1 July 2025.
[143] 'Urban cable cars get off the ground' *The Agility Effect* (16 June 2022) https://www.theagilityeffect.com/en/article/urban-cable-cars-get-off-the-ground/ accessed 1 July 2025.
[144] Valentine Hilaire, "Roofs of Mexico City's Massive Food Market Will Power Public Buses" (*Bloomberg CityLab*, 3 October 2024) https://www.bloomberg.com/news/articles/2024-10-03/mexico-city-public-buses-will-be-powered-by-food-market-solar-panels accessed 14 June 2025.

integrated with public transit.[145] "Muévete en Bici" is a weekly Mexico City program that closes major streets to cars, turning them into safe, car-free spaces for cyclists and pedestrians to promote sustainable mobility, healthy living, and public engagement with urban space.[146] In addition, cycling infrastructure was expanded by building over 200 km of new bike lanes, doubling the total to 380.72 km, and adding 2,500 Ecobici bikes, surpassing the previous 14-year total and significantly augmenting cycling culture.[147] Ecobici is Mexico City's public bike-sharing system that offers a transportation alternative through a network of docking stations and bicycles available for short-term use.[148]

These moves were inspired by Bogotá's ciclovía and Guadalajara's "Paseo de Todos," as well as successful models in European cities like Barcelona and Paris; the initiative marked a "turning point for Mexico City's public bicycle program."[149] As a whole, biking is often regarded as a practical mode of transportation that transcends social classes, and reduces emissions while encouraging healthy lifestyles.

Sheinbaum's public transport reform additionally ensures these various modes of sustainable transportation are accessible to the entire population of Mexico City. The strategy includes a promotion of low emission transport by providing subsidies for Ecobici and Dezba memberships, supporting access to public transportation, and creating shared corporate transportation routes and a car sharing platform.[150] It also encourages bicycle use through educational initiatives such as bike schools. This makes sustainable transport accessible and equitable by reducing cost barriers, expanding the mobility options for low-income users, and providing inclusive infrastructure and education that enable a broader participation.

Another way this was carried out is through the integrated mobility initiative. Previously, the payment across public transportation was fragmented, requiring separate methods. With the Tarjeta de Movilidad Integrada (Integrated Mobility Card), these modes were combined under a single card that aimed to improve user

---

[145] Jiménez Cisneros, B. E. (Ed.), La contaminación ambiental en México: perspectivas sobre aire, agua y suelo (Limusa Noriega Editores, revised edn 2019) https://d1wqtxts1xzle7.cloudfront.net/60313318/ART-RE-31-0120190816-83177-e18964-libre.pdf accessed 16 June 2025.

[146] Secretaría de Movilidad de la Ciudad de México, Muévete en Bici, Gobierno de la Ciudad de México https://www.semovi.cdmx.gob.mx/tramites-y-servicios/mi-bici/muevete-en-bici accessed 15 June 2025.

[147] Gobierno de la Ciudad de México, 'Gobierno CDMX duplicó el número de ciclovías en 4 años' (Capital 21 news release, 27 Sept. 2022), https://www.capital21.cdmx.gob.mx/noticias/?p=33327 accessed 16 June 2025.

[148] Secretaría de Movilidad de la Ciudad de México ibid.

[149] Cisneros (n 102).

[150] Gobierno de la Ciudad de México, Movilidad inteligente en la ciudad, 17 June 2022, https://gobierno.cdmx.gob.mx/noticias/movilidad-inteligente-en-la-ciudad/ accessed 16 June 2025.

convenience and system efficiency.[151] This created an integrated payment system across the Metro, Metrobús, Cablebús, trolleybuses, and bikes.

Mexico City's reform of public transport serves as an example of how Sheinbaum's values associated with climate policy have been present since the beginning of her political career. These values include the achievement of a "democratic and equitable city."[152] At first, seemingly unassociated to environmentalism, this angle can be understood through Mexico's particular stakes which affect both the environmental and social aspects of emissions and inequality.

National Water Plan 2024-2030

On the 21st of November, 2024, Sheinbaum announced the implementation of the National Water Plan 2024-2030, a collection of policy proposals and institutional changes to tackle water scarcity in Mexico.[153] The plan would be built on four principal pillars: water sovereignty, justice and access to water, environmental impact mitigation, and transparent management.[154] Within it is the General Water Law—which declares access to water as a human right nationally—would be written to co-exist with the National Water Law, passed by the Salinas de Gortari administration in 1992.[155] The National Water Law was often criticized for poor adaptation to issues such as droughts, overextending heavy amounts of concessions to private companies under the "neoliberal" agenda of Salinas de Gortari,[156] and a lackluster framework for tackling water-access complaints.[157] The General Water Law was published in the Federal Office Gazette (DOF) on the 19th of December,

[151] Mexico City, Programa Integral de Movilidad Sustentable 2019–2024, Jefatura de Gobierno de la Ciudad de México & Secretaría de Movilidad, 7 June 2022, https://www.jefaturadegobierno.cdmx.gob.mx/storage/app/media/pdf/PROGRAMA%20INTEGRAL%20DE%20MOVILIDAD%20SUSTENTABLE%202019-2024.pdf accessed 16 June 2025.

[152] Tirado Rodríguez, Manuel Alexis, Propuesta de Plan Maestro de Movilidad Ciclista Para la Alcaldía Venustiano Carranza (BA thesis, Universidad Nacional Autónoma de México, 2023) https://ru.dgb.unam.mx/bitstream/20.500.14330/TES01000846701/3/0846701.pdf accessed 16 June 2025.

[153] Gobierno de México, 'Presidenta Claudia Sheinbaum presenta Plan Nacional Hídrico que concibe al agua como un derecho y un bien de la nación' (Presidencia de la República, 21 November 2024) https://www.gob.mx/presidencia/prensa/presidenta-claudia-sheinbaum-presenta-plan-nacional-hidrico-que-concibe-al-agua-como-un-derecho-y-un-bien-de-la-nacion accessed 12 June 2025.

[154] Proyectos México, *Water (investment-cycle: hydraulic)* (Proyectos México, last reviewed May 2025) https://www.proyectosmexico.gob.mx/en/how-mexican-infrastructure/investment-cycle/hydraulic/ accessed 12 June 2025.

[155] Prodensa (n 38).

[156] Comisión Nacional del Agua (CONAGUA), 'Presenta Conagua Plan Nacional Hídrico' (Comunicado, 21 November 2024) https://www.gob.mx/conagua/prensa/presenta-conagua-plan-nacional-hidrico accessed 12 June 2025.

[157] Gabriel López Porras and Jakub Ciesielczuk, *Country Report: Mexico - Lessons learned from a constitutional controversy on the Mexican water management* (IUCN AEL Journal of Environmental Law, 1 April 2021) https://repository.lincoln.ac.uk/24391393 accessed 12 June 2025.

2024, and became legally binding the day after, cancelling any water-related agreements (including concessions) that went contrary to its contents.[158]

The National Water Plan, introduced months after Sheinbaum's inauguration, flows well into the general vision that Morena proposed as part of their Proyecto de Nación 2024-2030, with a significant portion of their environmental goals being designated to clean water projects and tackling water scarcity.[159] The National Water Plan also directly addresses several of the points Sheinbaum promised to implement by continuing the Fourth Transformation, including the goals of cleaning up the three most contaminated rivers in Mexico (the Lerma Santiago, the Atoyac, and the Tula),[160] and building 17 new water infrastructure projects around the country.[161] Sheinbaum's scientific passion for technological development and energy efficiency is likewise present within the National Water Plan, with the proposed renovation of the National Water Commission's (CONAGUA) water tracking and management system, including a newly developed unified digital database.[162]

Notably, a large emphasis is being placed on collaboration with the private sector on enforcing aspects of the National Water Plan, depicted in the first announcement by the head of Group Lala, who promised 'willing' collaboration in reviewing water concessions with the federal government, and ensuring equitable access between the private and public sectors, while tackling waste and overexploitation.[163] The implementation of water concessions, standardized under the aforementioned 1992 National Water Law, were heavily influenced by (at the time) the government's

---

[158] Rodolfo Rueda, Claudia García and Mariana Salinas, 'Acuerdo Nacional por el Derecho Humano al Agua y la Sustentabilidad publicado en DOF' *Holland & Knight Alert* (20 December 2024) https://www.hklaw.com/en/insights/publications/2024/12/acuerdo-nacional-por-el-derecho-humano-al-agua-y-la-sustentabilidad accessed 20 June 2025.

[159] *Proyecto de Nación 2024–2030: Versión Definitiva* (Movimiento Regeneración Nacional, February 2024) 23–24, 'Medio Ambiente y Colapso Ambiental' https://morenademocracia.mx/wp-content/uploads/2024/02/Proyecto-de-Nacion-2024-2030-Definitivo.pdf.

[160] Presidencia de la República, *100 compromisos para el Segundo Piso de la Cuarta Transformación* (Gobierno de México, 3 October 2024) https://www.gob.mx/presidencia/documentos/100-compromisos-para-el-segundo-piso-de-la-cuarta-transformacion accessed 12 June 2025.

[161] Admin, 'Mexico: 17 Water Projects Planned' (*Blue Community*, 13 March 2025) https://blue-community.net/2025/03/13/mexico-17-water-projects-planned/ accessed 13 June 2025.

[162] Comisión Nacional del Agua (CONAGUA) and Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT), *Comunicado de prensa conjunto No 132-24B: Acuerdo Nacional por el Derecho al Agua y la Sustentabilidad* (Ciudad de México, 25 November 2024) https://www.gob.mx/cms/uploads/attachment/file/959384/Comunicado_de_Prensa_Conjunto_No_132-24B.pdf

[163] Juan Carlos Serra Campillo, Jesús Manuel Colunga Victoria, César Augusto Reyes López et alia. 'The Impact of the New Water Regulation' (Basham, Ringe y Correa S.C., 9 January 2025) https://basham.com.mx/en/the-impact-of-the-new-water-regulation/ accessed 12 June 2025.

interest in economic liberalization. At the time, there was also a global belief that such policies would allow the farming industry and their communities, large and small, to increase output and allow opportunity for growth and development.[164]

These concessions, however, allowed for the modern overuse of water resources by the agricultural industry, as well as disproportionate rates of water wasted by it. The increased federalization of water resources in the National Water Plan goes in line with a recent international trend of de-privatizing access to water[165] and redistributing access more equally to citizens.[166] Considering the dire lack of water access in the country, disproportionately so in rural, native, and poorer communities, implementing some level of water plan marks a significant beginning to Sheinbaum's environmental policy as president.

Energy Policy 2024-2030

Mexico's energy landscape is undergoing significant transformation through a legal reform designed to streamline regulation and improve sector coordination. President Sheinbaum introduced a comprehensive package to consolidate and update the country's energy framework. On March 18, 2025, a decree enacted eight new secondary laws covering all major energy sectors, dissolving specialized regulatory bodies and transferring their responsibilities to a restructured National Energy Commission under the Ministry of Energy.[167] The goal is to ensure solar, geothermal, biofuels, and fossil fuels are all governed within a unified regulatory and planning structure.

Starting with solar energy, several initiatives exemplify how Sheinbaum's energy reform enables coordinated, large-scale clean energy development by aligning infrastructure, manufacturing, and regional planning under a unified regulatory framework. To do this, Mexico's northwestern region will be transformed into a clean energy and high-tech manufacturing hub through a coordinated federal and local strategy. Plan Sonora plays a central role in this effort by combining solar

[164] M. W. Rosegrant, R. G. Schleyer and S. N. Yadav, 'Reforming water allocation policy through markets in tradable water rights: lessons from Chile, Mexico, and California' (2005) 32 *Cuadernos de Economía* 291, 291–315 https://www.jstor.org/stable/41951283 accessed 20 June 2025.
[165] Colin Kirkpatrick, David Parker and Yin-Fang Zhang, 'An Empirical Analysis of State and Private-Sector Provision of Water Services in Africa' (2006) 20 *World Bank Economic Review* 143 https://www.jstor.org/stable/40282322 accessed 20 June 2025.
[166] The World Bank, *Chile Moves Toward More Sustainable and Equitable Water Resources Management with World Bank Support* (Press Release, 10 June 2024) https://www.worldbank.org/en/news/press-release/2024/06/10/chile-avanza-hacia-una-gesti-n-m-s-sostenible-y-equitativa-de-los-recursos-h-dricos-con-apoyo-del-banco-mundial accessed 20 June 2025.
[167] Mexico, Ley del Sector Eléctrico, Diario Oficial de la Federación, 18 March 2025, https://www.diputados.gob.mx/LeyesBiblio/ref/lse/LSE_orig_18mar25.pdf accessed 16 June 2025.

infrastructure development with investments in lithium mining and natural gas.[168] The plan aligns with national energy transition goals while responding to the growing electricity demand driven by industrial expansion.

Currently, despite the high solar potential, the northwestern region's domestic solar panel manufacturing is limited, with 10 local producers collectively generating less than 2 GW annually.[169] However, nine solar projects are expected to come out of the plan with an expected investment of 4.9 billion USD and a generation of 4.673 MW from 2030 to 2050.[170] The flagship project, Puerto Peñasco in the Sonoran Desert, will be the largest photovoltaic plant in the Americas, generating 1,000 MW with 278,000 solar panels.[171] As a result, electricity will be supplied to northern industries and potentially exported to the United States.

Complementing this, the Solar Home Panels Initiative ("Sol del Norte") targets residential users in hot, high-demand areas like Mexicali.[172] This provides rooftop solar panels to low- and medium-consumption homes, aiming to reduce household energy costs and ease grid strain during summer heatwaves. In its first phase, the program will install systems in 5,000 homes, with plans to expand in 2026.[173] This allows for participants to save up to 70% on their monthly electricity bills, overall aligning the program with Sheinbaum's climate and social equity priorities.[174]

Beyond solar infrastructure, in March 2025, Sheinbaum introduced the Electric Sector Reform Law that, building on the 2008 Renewable Energy and Transition Financing Law, redefined how distributed solar energy is integrated into Mexico's national energy framework.[175] Now, residential and commercial solar systems producing up to 0.7 MW are officially classified as distributed generation and do not require permits, provided they meet technical standards.[176] The no-permit cap was

---

[168] MND Staff, "A desert state takes center stage in Mexico's clean energy plans," Mexico News Daily (12 Dec. 2024) https://mexiconewsdaily.com/politics/mexico-clean-energy/ accessed 22 June 2025.
[169] Véjares, Maximiliano, Renato H. de Gaspi, Tim Sahay, Cathy Wang, Jonas Goldman & Bentley Allan, Geopolitical Brief No. 4: Las oportunidades de política industrial verde de México en el nuevo panorama geopolítico (Zero Policy Lab, April 2025) https://static1.squarespace.com/static/64ca7e081e376c26a5319f0b/t/6824a1eaf4e0fb284b0aab9c/1747231210940/GB04+-+SPA.+Mexico+-+Final.pdf accessed 22 June 2025.
[170] Véjares ibid.
[171] Véjares ibid.
[172] Gobierno de México, "Versión estenográfica. Banderazo del Programa 'Sol del Norte' de Paneles Fotovoltaicos," Presidencia de la República (29 Mar. 2025) https://www.gob.mx/presidencia/articulos/version-estenografica-banderazo-del-programa-sol-del-norte-de-paneles-fotovoltaicos accessed 16 June 2025.
[173] Gobierno de México ibid.
[174] Gobierno de México ibid.
[175] Mexico (n 124).
[176] International Trade Administration, "Mexico Energy Sector Reform" (Trade.gov, 2 months ago) https://www.trade.gov/market-intelligence/mexico-energy-sector-reform accessed 23 June 2025.

raised from 0.5 MW to 0.7 MW, allowing larger rooftop systems to connect to the grid without a complex approval process.[177]

These reforms maintain user access to rooftop solar while ensuring state control over surplus energy flows.[178] Surplus energy from distributed systems must be sold exclusively to the CFE, not to third parties.[179] Conversely, the National Energy Commission (CNE) is responsible for defining the compensation terms and interconnection rules under which the CFE purchases this energy. While users retain the ability to lower energy costs through self-generation, they must comply with technical regulations and CFE purchase agreements for any surplus sold to the grid. This framework balances individual and business access to solar generation with state oversight and grid reliability.

Apart from the expansion on solar regulation, new laws and amended laws presented to the Joint Committee on Energy and Legislative Studies of the Senate and the Chamber of Deputies seek to strengthen the country's energy and electricity sector through resources like geothermal energy. Mexico sits on a rich geothermal resource base of around 1,400 MW spread across areas like Cerro Prieto and Los Humeros.[180] But until now, permits were bogged down in bureaucracy, and geothermal development stalled, especially for non-electric uses.[181] As part of Sheinbaum's general energy reform, the process has now been simplified. This was achieved by creating one-law permitting for exploring, exploiting, or doing smaller-scale "exempt" projects.[182] This "Aprovechamiento Geotérmico Exento," (Exempt Geothermal Use) category was introduced so low-scale users don't need a full permit.[183] Likewise, the "Usos Diversos" (Diverse Usage) category was expanded to include a range of non-electric applications and streamlines those too, all under

[177] Raquel Bierzwinsky, Hernán González Estrada & Carlos Campuzano, 'Mexico enacts new laws for the power sector', ProjectFinance.Law (27 Mar. 2025) https://www.projectfinance.law/publications/2025/march/mexico-enacts-new-laws-for-the-power-sector/ accessed 23 June 2025.
[178] Rolando Fuentes, 'How Sheinbaum's Energy Policies Could Reshape Mexico's Electricity Sector' (2024) Baker Institute for Public Policy https://www.bakerinstitute.org/research/how-sheinbaums-energy-policies-could-reshape-mexicos-electricity-sector accessed 2 June 2025.
[179] Bierzwinsky (n 134).
[180] Gutiérrez-Negrín, L. C. A., Canchola Félix, I., Romo-Jones, J. M. & Quijano-León, J. L., "Geothermal energy in Mexico: update and perspectives" (2020) Proceedings World Geothermal Congress 2020 https://www.researchgate.net/publication/343111483_Geothermal_energy_in_Mexico_update_and_perspectives accessed 16 June 2025.
[181] Gutiérrez-Negrín ibid.
[182] México, Ley de Geotermia (Diario Oficial de la Federación, 18 Mar. 2025) https://www.diputados.gob.mx/LeyesBiblio/pdf/LGeo.pdf accessed 16 June 2025.
[183] Enrique Jr Garza Tello, 'Current regulation of geothermal energy in Mexico' (Lexology, 31 Oct. 2022) https://www.lexology.com/library/detail.aspx?g=a6c1422f-45ba-4caf-af3b-03dee310758c accessed 16 June 2025.

one unified framework.[184] As a whole, while not the main focus of Sheinbaum's energy reform, the evolved frameworks behind renewable energy sources like solar and geothermal not only takes advantage of available resources, but also creates more accessible paths to a sustainable transition.

Notwithstanding, these renewable energy aspects of her larger energy reform cannot be mentioned without analyzing the biggest emphasis of her policy relating to Petróleos Mexicanos (PEMEX) and the CFE. PEMEX is Mexico's state-owned oil and gas company, responsible for the exploration, production, refining, and distribution of petroleum and related products.[185] Through constitutional reforms, Sheinbaum is responsible for reclassifying PEMEX and the CFE as public institutions, reinforcing state control over the energy sector. As part of this framework, the CFE is mandated to retain 54 percent of national electricity generation, limiting the role of private actors in transmission and dispatch.[186] The administration's energy strategy focuses on energy sovereignty, aiming to reduce Mexico's dependence on imported fuels and electricity.

Concretely, the plan includes rehabilitating six existing refineries like the Dos Bocas (Olmeca) refinery, with an output target of 340,000 barrels per day to strengthen domestic fuel production.[187] The objective is to to address supply gaps despite Pemex's ongoing financial losses in refining operations. Despite Pemex being the world's most indebted oil company, with liabilities of 101.5 billion USD in 2024, the government is relying on it to meet national fuel demand and stabilize prices.[188] To enhance generation capacity, the administration launched three cogeneration projects with Pemex totaling 2,422 MW and 2.1 billion USD in investment.[189] In electricity transmission, Sheinbaum's plan includes 145 CFE-led projects, with 65 projects expanding the national grid 2.7 billion USD and 80 projects modernizing existing infrastructure.[190]

---

[184] Oscar Llamosa Ardila, 'Presidente de Mexico propone reforma a ley geotérmica' (PiensaGeotermia, 16 Feb. 2025) https://www.piensageotermia.com/presidente-de-mexico-propone-reforma-a-ley-geotermica/ accessed 16 June 2025.
[185] Petróleos Mexicanos, About Pemex, Gobierno de México https://www.pemex.com/en/about-pemex/Paginas/default.aspx accessed 15 June 2025.
[186] Mexico (n 124).
[187] Mexico (n 124).
[188] Bullón Méndez, Mariano, "México: Una aproximación a la Cuarta Transformación," Temas de Economía Mundial No. 46 (CIEM, Sept. 2024) 74–89 https://www.ciem.cu/publicaciones/2024/Temas%20de%20Econom%C3%ADa%20Mundial%20No.46.pdf#page=74 accessed 22 June 2025.
[189] Véjares (n 126).
[190] Véjares (n 126).

Historically, state-owned monopolies like Pemex and the CFE shaped Mexico's national identity by asserting state control over strategic sectors such as energy and framing it as a symbol of sovereignty and social justice. These monopolies were justified through official discourse as tools for redistributing wealth, with revenues funding education, infrastructure, and public services, reinforcing a sense of equity and trust in the state.[191] However, at face value, this component of the energy reform garners Objectives 63 and 66 of Sheinbaum's "National Transformation Plan 2024-2030" as contradictory.[192] Objective 63 strengthens PEMEX (fossil fuels) and Objective 66, the transition towards clean energies. This contradiction is clearly exposed in the recent studies of Kühne et al.[193] The confuting elements of Sheinbaum's energy reform illustrate the complexities behind Mexico's interest in achieving energy sovereignty while balancing economic viability, environmental goals, and equity.

Sheinbaum's Solutions in Action

Mexico City Public Transport Reform

Since the end of Sheinbaum's mayorship, international recognition of Mexico City's public transportation evolution has been relatively positive, with Sheinbaum's administration being specifically credited for the system's sustainability and its impact on tackling social inequality.[194] The city had set a 2024 target of reducing CO2-equivalent emissions by 10% compared to their 2016 levels, a goal which was surpassed by 102.7%, as the emissions were reduced by approximately 2,260,656

[191] Martínez Armengol, Ángel Ignacio, "Construcción y difusión de la identidad nacional y la formación social mexicana: una reflexión histórica," Universita Ciencia 13(36) (2025): 233–251, DOI:10.5281/zenodo.15122398 https://doi.org/10.5281/zenodo.15122398 accessed 19 June 2025.
[192] Medel-Ramírez, Carlos, "Análisis técnico al documento del Proyecto de Transformación Nacional 2024–2030 en México: Modelo lógico-matemático para la evaluación de coherencia y contradicciones en políticas públicas" (2024) Desafíos Sociales del Siglo XXI https://doi.org/10.13140/RG.2.2.35625.20328 accessed 19 June 2025.
[193] Kühne, K., Bartsch, N., Tate, R. D., Higson, J. & Habet, A., "'Carbon Bombs' – Mapping key fossil fuel projects," Energy Policy 166 (2022) 112950 https://doi.org/10.1016/j.enpol.2022.112950 accessed 19 June 2025.
[194] Metrobús de la Ciudad de México, 'Recibe Ciudad de México mención honorífica en los "Sustainable Transport Award" por proyectos de movilidad realizados por Claudia Sheinbaum Pardo' (Metrobús CDMX Press Release, 7 January 2025) https://www.metrobus.cdmx.gob.mx/comunicacion/nota/MB-070125SUSTAINABLETRANSPORTAWARD accessed 14 June 2025.

tonnes.[195] Out of these calculations, Sheinbaum's transport secretary estimated 152,000 tonnes of CO2 emissions were reduced directly by the transportation transformation.[196] The UN Office for Project Services calculated that through Sheinbaum's public transport revision, an additional 1.4 million people were able to use transportation efficiently and sustainably.[197]

The successor to Sheinbaum, Clara Brugada (also notably part of Morena), has made it clear she intends to continue Sheinbaum's public transportation policy.[198] She pledged to continue Sheinbaum's promise of 143 new electric buses into the Metrobús system by the end of 2025, and 358 by the end of 2030, which would make 65% of the total fleet electric.[199] In regards to Cablebús, in response to the 142,000 daily passengers halving their travel time thanks to the system, 4 additional lines have been promised.[200]

In terms of Sheinbaum's expansion of cycling infrastructure, the results yielded have been generally positive, despite certain limitations in the measurable impact of cycling on emissions and broader urban challenges. However, in Mexico City's progress report for its Environmental and Climate Change Program, it was estimated that the over 200 km of new bike lanes built contributes to an annual reduction of 8,224 tons of carbon dioxide equivalent helping meet climate mitigation goals.[201] Sheinbaum has often framed cycling "as a unifying tool for social justice" by making

---

[195] Secretaría del Medio Ambiente de la Ciudad de México, "Supera la Ciudad de México meta en reducción de millones de toneladas de compuestos y gases causantes del cambio climático," *SEDEMA* (2025) https://www.sedema.cdmx.gob.mx/comunicacion/nota/supera-la-ciudad-de-mexico-meta-en-reduccion-de-millones-de-toneladas-de-compuestos-y-gases-causantes-del-cambio-climatico accessed 22 June 2025.

[196] Lara Rodríguez, 'Sheinbaum builds green-policy record as mayor' (April 2023) *EcoAméricas* https://www.ecoamericas.com/issues/article/2023/4/055A7E78-7238-42D2-8DC7-C673DDBFC4D0.

[197] UNOPS, 'Modernizing Transportation in Mexico City' (UNOPS, 2023) https://www.unops.org/news-and-stories/stories/modernizing-transportation-in-mexico-city accessed 1 July 2025.

[198] Adriana Alarcón, 'Sustainability Key to Clara Brugada's Urban Mobility Plan' (*Mexico Business News*, 8 October 2024) https://mexicobusiness.news/mobility/news/sustainability-key-clara-brugadas-urban-mobility-plan accessed 14 June 2025.

[199] Arturo Steinvorth et al, *Pipeline of Electric Bus Projects in Latin America* (C40 Cities, April 2023) https://www.c40.org/wp-content/uploads/2023/04/FINAL-Pipeline-of-Electric-Bus-Projects-in-Latin-America-compressed.pdf accessed 1 July 2025.

[200] MBN Staff, 'Mexico City has earned an honorable mention in the 2025 Sustainable Transport Awards for advancing sustainable urban mobility' *Mexico Business News* (8 January 2025) https://mexicobusiness.news/mobility/news/mexico-city-recognized-advancing-sustainable-urban-mobility accessed 1 July 2025.

[201] Secretaría del Medio Ambiente de la Ciudad de México, Progress Report: Environmental and Climate Change Program for Mexico City 2019–2024 (Agenda 2030 CDMX, June 2022) https://agenda2030.cdmx.gob.mx/wp-content/uploads/2022/06/Progress-Report-Environmental-And-Climate-Change-Program-For-Mexico-City-2019-2024.pdf accessed 23 June 2025.

mobility more equitable and accessible.[202] This accomplishment can be observed through the Healthy City Award received by her administration from Bloomberg Philanthropies in recognition of its commitment to active mobility.[203] Particular focus was given to making neighborhoods more accessible by foot and bicycle, reinforcing inclusive urban design. Yet criticism arose from mobility consultants and urban cyclist groups during the years of implementation. The main issue being that executing the plan in Mexico City with the suboptimal environmental characteristics was not recommendable.[204] Despite this skepticism, the cycling program advanced as a cornerstone of the city's mobility policy.

The goal of the integrated mobility system was to make public transportation more accessible in order to reduce overall emissions. To achieve this, the system encouraged users to switch between different modes of transport, promoting a shift from high-emission options to more sustainable ones. To better understand the shift in transportation habits, the change in the number of subway users serves as a useful indicator of how people are transitioning between different modes of transport. Between 2020 and 2024, the quantity of subway users in Mexico City increased by 236,682,411 individual users.[205] As a whole, this initiative was considered to have avoided 152,529 tons of CO2 each year by the Head of Government of Mexico City & Ministry of Mobility. Additionally, in 2010, Sheinbaum and her colleague Juan Carlos Solís recorded that transportation accounted for 39% of Mexico City's emissions;[206] by 2022, this share had decreased by 5 percentage points to 34%.[207]

While the sustainable shift to Mexico City's public transportation has harnessed impressive results, the effects of air pollution in the city are still present. Between January and April of 2025, five environmental contingencies were activated in the city, with up to eleven additional ones expected by the end of the year.[208]

---

[202] Gobierno de la Ciudad de México, La bicicleta nos une en la justicia social: Claudia Sheinbaum (Obras CDMX) https://www.obras.cdmx.gob.mx/comunicacion/nota/la-bicicleta-nos-une-en-la-justicia-social-claudia-sheinbaum accessed 16 June 2025.
[203] Mario García, 'CDMX es reconocida como ciudad saludable por sus políticas de movilidad' (Capital 21, 16 Mar. 2023) https://www.capital21.cdmx.gob.mx/noticias/?p=38353 accessed 16 June 2025.
[204] Cisneros (n 102).
[205] Sistema de Transporte Colectivo, Cifras de Operación del Metro de la Ciudad de México, Gobierno de la Ciudad de México https://metro.cdmx.gob.mx/operacion/cifras-de-operacion accessed 15 June 2025.
[206] Solís, J. C. and Sheinbaum, C., "Energy consumption and greenhouse gas emission trends in Mexican road transport" (2013) 17 Energy for Sustainable Development 280 https://doi.org/10.1016/j.esd.2012.12.001 accessed 16 June 2025.
[207] International Energy Agency (n 57).
[208] Noticias Ambientales, 'The Valley of Mexico City faces an environmental crisis: 5 ozone contingencies in 2025 that need to be addressed' *Noticias Ambientales* (23 May 2025) https://noticiasambientales.com/environment-en/the-valley-of-mexico-city-faces-an-environmental-crisis-5-ozone-contingencies-in-2025-that-need-to-be-addressed/ accessed 1 July 2025.

Environmental contingencies are activated when PM10 and PM2.5 levels around the city exceed a 'healthy' limit, and are followed by limitations on which vehicles can be driven within the city and recommendations for citizens to stay at home.[209] The expected occurrence of contingencies this year would exceed the 12 induced in 2024, showing that the health concerns of air pollution are growing, and will need continued and active sustainable policy in the long-term to address.[210]

National Water Plan 2024-2030

Due to its very recent announcements, there are only so many aspects of the National Water Plan that can be judged in terms of effectiveness, but there have been some developments since its implementation that show stronger and weaker signs of the plan in action. Some of the most widely accepted aspects of the plan are restoring the Lerma Santiago, Atoyac, and Tula rivers, all three of which are considered heavily polluted yet integral to the citizens and wildlife population dependent on them.[211] Sheinbaum had explained her restoration plans to include three major steps, including improving wastewater efficiency plants, ensuring legal industry compliance, and implementing new drainage systems, all steps supported by heavy federal financial investment.[212] Strong emphasis on collaboration with the private sector and sanctioning in case of non-compliance has been stressed by Sheinbaum and local observers as integral to tackling the heavy generation pollution by industry on the rivers.[213] Furthermore, with 70% of Mexico's water supply being used by the agricultural sector, and a similar rate of the supply being wasted by the sector, there is also heavy emphasis on improving efficiency of the irrigation system.[214]

---

[209] Rafael Silva-Quiroz et al, 'Atmospheric blockages as trigger of environmental contingencies in Mexico City' *Heliyon* (24 June 2019) https://www.atmosfera.unam.mx/atmospheric-blockages-as-trigger-of-environmental-contingencies-in-mexico-city/ accessed 1 July 2025.

[210] Aura Moreno, 'Government Actions to Tackle Air Pollution in Mexico City' *Mexico Business News* (3 March 2025) https://mexicobusiness.news/health/news/government-actions-tackle-air-pollution-mexico-city accessed 1 July 2025.

[211] MBN Staff, 'Mexico Launches National Water Cleanup Effort' (*Mexico Business News*, 24 March 2025) https://mexicobusiness.news/agribusiness/news/mexico-launches-national-water-cleanup-effort accessed 13 June 2025.

[212] Eliza Galeana, 'SADER Visits Tula to Oversee Water Treatment' (*Mexico Business News*, 10 June 2025) https://mexicobusiness.news/agribusiness/news/sader-visits-tula-oversee-water-treatment accessed 13 June 2025.

[213] Juan Luis García, 'Poison in the rivers: The challenge of restoring life in a six-year period' (*Causa Natura Media*, 19 November 2024) https://causanaturamedia.com/en/notas/poison-in-the-rivers-the-challenge-of-restoring-life-in-a-six-year-period accessed 13 June 2025.

[214] Fernando Mares, 'Government Unveils National Water Plan Amid CONAGUA Budget Cuts' (*Mexico Business News*, 25 November 2024)

Water concessions, a large contributor to the levels of water scarcity in rural populations, although increasing by the tail end of 2024 by almost 40%,[215] have now begun being returned in large quantities by private entities in line with the promise made at the original press conference, exemplified by Coca-Cola most recently returning 4 million cubic meters of water.[216] The implementation of a single database by CONAGUA on water resources was successfully published in March of 2025, making it easier for future returns of unused or misused water concessions to the federal government.[217]

This advancement has been overshadowed by a 40% federal budget decrease for the 2025 fiscal year, despite the heavy technological renovation needed for the institution.[218] Such a large funding cut follows a similar pattern to other cuts experienced by environmental institutions since Sheinbaum's inauguration, including the Ministry of Environmental and Natural Resources (SEMARNAT).[219] These cuts have worried some of the administration's intent on fulfilling the environmental promises made, although the Coordinator of Public Spending and Accountability has defended these deficits, explaining them to be a consequence of heavy spending done in the years preceding Sheinbaum's presidency to address climate concerns in need at the time.[220] This explanation seems contradictory, however, as Sheinbaum's

---

https://mexicobusiness.news/infrastructure/news/government-unveils-national-water-plan-amid-conagua-budget-cuts accessed 13 June 2025.

[215] Admin, *Mexico: Water Concessions up 38.8% in Two Years* (*Blue Community*, 29 January 2025) https://blue-community.net/2025/01/29/mexico-water-concessions-up-388-in-2-years/ accessed 13 June 2025.

[216] MND Staff, 'Coca-Cola Mexico returns more than 4 million cubic meters of unused water' (*Mexico News Daily*, 3 June 2025) https://mexiconewsdaily.com/news/coca-cola-mexico-commits-returning-more-water/ accessed 13 June 2025.

[217] Enrique Muñoz Guízar and Georgina Zavala González, *Mexico Implements Unified Digital Portal for Water Concessions* (Pérez-Llorca Legal Briefing, 28 March 2025) https://www.perezllorca.com/en-mx/news/legal-briefing/mexico-implements-unified-digital-portal-for-water-concessions/ accessed 13 June 2025.

[218] Olga Gamboa Velasco, 'Alertan expertos sobre reducción presupuestal para sector agua: proponen se reconsidere la asignación planteada en el proyecto del PEF 2025' (*CCDA*, 20 November 2024) https://aguas.org.mx/cca/comunicacion/alertan-expertos-sobre-reduccion-presupuestal-para-sector-agua-proponen-se-reconsidere-la-asignacion-planteada-en-el-proyecto-del-pef-2025/ accessed 13 June 2025.

[219] Eliza Galeana, 'Environmental Protection Spending Plunges in Early 2025' (*Mexico Business News*, 29 April 2025) https://mexicobusiness.news/policyandeconomy/news/environmental-protection-spending-plunges-early-2025 accessed 13 June 2025.

[220] Hugo Roberto Rojas Silva, 'Anotaciones del Proyecto de Presupuesto Federal 2025 para agua' (*La Jornada Estado de México*, 19 November 2024) https://lajornadaestadodemexico.com/anotaciones-del-proyecto-de-presupuesto-federal-2025-para-agua/ accessed 13 June 2025.

presidency was projected to put a much larger emphasis on the environment than López Obrador's.

In regards to the funding that is being provided, there is an interesting disparity between regions that does not align with the disproportional needs in terms of water scarcity, as exemplified by the 2025 approved funding for the Drinking Water, Drainage, and Treatment program (PROAGUA).[221] Regions with the highest rates of households facing water insecurity, like Guerrero (30.6%), Baja California Sur (29%), and Aguascalientes (23.1%), receive significantly lower funds than regions that have the lowest water insecurity rates, including Yucatán (3.9%), Chihuahua (7.3%), and Guanajuato (8.1%), with disparities reaching tens of millions of Mexican pesos.[222] Whether or not the promised infrastructure projects, which do include areas such as Guerrero and Baja California Sur, make up for the lack of proportional funding will have to be seen as they continue development, with several already under construction.[223]

A recent development since the implementation of the National Water Plan has been the 2nd inauguration of Trump as the president of the United States. Although his volatile relationship with Sheinbaum has already been detailed, his involvement in the realization of the plan is also notable. Citing the historical 1944 Mexico-US water treaty, a deal that requires Mexico to deliver 1.75 million acre-feet of water to the USA has been signed by both parties.[224] These concessions were previously decreased by the Biden administration due to the increased water scarcity in Mexico, marking another drawback to improving water accessibility in the state.[225] This deal was made to avoid a surge of Trump's infamous tariffs. It is particularly problematic due to the water being transported to Mexico being sources from Northern Mexican states, previously highlighted due to particularly low water availability for Mexican

[221] Secretaría de Hacienda y Crédito Público, *Tabla de Asignaciones por Entidad Federativa 2025* (Gobierno de México, 2025) https://www.gob.mx/cms/uploads/attachment/file/981431/TABLA_ASIGNACIONES_EDOS_2025_0001.pdf accessed 13 June 2025.
[222] Sera L. Young et al., *Cuernavaca Press Release: Water Insecurity in Mexico* (Northwestern University, 3 March 2025) https://buffett.northwestern.edu/documents/cuernavaca_press_release_english_v5.pdf accessed 13 June 2025.
[223] BNamericas, 'Water infrastructure projects advance in Mexico' (*BNamericas*, May 29 2025) https://www.bnamericas.com/en/news/water-infrastructure-projects-advance-in-mexico accessed 13 June 2025.
[224] Kimberly M. S. Cartier, "Mexico Will Give U.S. More Water to Avert More Tariffs," (*Eos*, 29 April 2025) https://eos.org/research-and-developments/mexico-will-give-u-s-more-water-to-avert-more-tariffs accessed 29 June 2025.
[225] Cartier ibid.

citizens, presenting an instance where environmental concerns were overshadowed by economic interests.[226]

The National Development Plan 2024-2030 has potential to substantially improve Mexico's water crisis, considering the focus being given on several important factors confounding said crisis, including pollution and an unequal distribution of resources. The plan is ambitious, and will require a shift in federal funding patterns that have emerged since Sheinbaum's inauguration with an increase in funding for the multiple institutional stakeholders needed, most notably CONAGUA. The construction and improvement of new water collection and wastewater instruments will be instrumental in the success of the policy. Based on Sheinbaum's previous implementation of Mexico City public transportation reforms, there is sufficient reason to believe that the mechanisms promised will be delivered as such.

Energy Policy 2024-2030

Centered on expanding renewable energy and increasing state oversight, the presidential energy plan aims to reduce costs and emissions while advancing a vision of energy sovereignty, though its centralized approach raises concerns about inclusivity and long-term sustainability. Analyzing the completion of these objectives requires the missing element of time for them to be fully implemented. However, the goals are clear, and through comparisons with other cases, estimations of Sheinbaum's energy policy can be assessed.

Sheinbaum's "goal is to lower electricity costs" by implementing photovoltaic panels on 5,500 rooftops in Mexicalí.[227] By the end of 2025, an expected 11,104 MWh of clean energy will be generated, and 4,864 tons of CO_2 emissions will be reduced from this investment.[228] Additionally, installing a 21 hectare 17.5 megawatt solar farm on the Central de Abasto rooftops - the biggest market in Latin América - will generate

[226] Reuters, "Mexico negotiating with states about water they can send to US under deal, Sheinbaum says," (Reuters, 15 April 2025) https://www.reuters.com/world/americas/mexican-govt-negotiating-with-states-about-water-they-can-send-us-under-deal-2025-04-15/ accessed 29 June 2025.
[227] Gobierno de México, "Versión estenográfica. Banderazo del Programa 'Sol del Norte' de Paneles Fotovoltaicos," Presidencia de la República (29 Mar. 2025) https://www.gob.mx/presidencia/articulos/version-estenografica-banderazo-del-programa-sol-del-norte-de-paneles-fotovoltaicos accessed 16 June 2025.
[228] Gobierno de México, "Versión estenográfica. Banderazo del Programa 'Sol del Norte' de Paneles Fotovoltaicos," Presidencia de la República (29 Mar. 2025) https://www.gob.mx/presidencia/articulos/version-estenografica-banderazo-del-programa-sol-del-norte-de-paneles-fotovoltaicos accessed 16 June 2025.

26,000 kilowatt-hours per day.[229] This is enough to supply electricity to approximately 10,000 homes.[230] Sheinbaum argues this is all part of the *cuarta transición*.[231]

Although insufficient time has passed to fully evaluate the long-term effects of the new geothermal law, its contributions to sustainable energy transition have already been widely recognized.[232] Geothermal energy is an extremely energy-efficient substitute for fossil fuels in thermal applications. In certain situations, these applications are more efficient since they accomplish energy substitution without the need for conversion to electricity.[233] In addition to being low-carbon, geothermal energy produces significantly fewer greenhouse gases than conventional fuels. Specifically, direct uses eliminate emissions from heating with gas or fuel oil.

Along with being an environmentally sustainable policy, geothermal energy is an equitable option as well. Over the past decade, domestic electricity tariffs in Mexico's central regions have increased by 35%, placing a growing financial burden on households.[234] A study using a fixed-effects panel econometric model finds that greater investment in geothermal power plants is associated with reduced production costs and increased internal electricity sales.[235] These outcomes suggest that geothermal energy can contribute to overall cost savings in the power sector. The study concludes that geothermal's high capacity factor makes it a promising tool for attracting investment and lowering household electricity prices.[236]

Lastly, Sheinbaum's focus on reinforcing PEMEX and the CFE can be understood through the lens of energy sovereignty and the nationalization of energy sources, a framework that, as Torres and Niewöhner argue, produces complex and twofold

[229] Claudia Sheinbaum, Como jefa de Gobierno, instalamos una central solar, en los techos de la Central de Abasto, YouTube, 6 July 2024, https://www.youtube.com/watch?v=bydBgDqeXoI accessed 15 July 2025.
[230] Claudia Sheinbaum, Como jefa de Gobierno, instalamos una central solar, en los techos de la Central de Abasto, YouTube, 6 July 2024, https://www.youtube.com/watch?v=bydBgDqeXoI accessed 15 July 2025.
[231] Claudia Sheinbaum, Como jefa de Gobierno, instalamos una central solar, en los techos de la Central de Abasto, YouTube, 6 July 2024, https://www.youtube.com/watch?v=bydBgDqeXoI accessed 15 July 2025.
[232] Rivera Delgado, D. P., Díaz López, F. J. and Carrillo González, G., "Transición energética, innovación y usos directos de energía geotérmica en México: un análisis de modelado temático," Problemas del Desarrollo 52.206 (Jul.–Sep. 2021) 115–141 https://doi.org/10.22201/iiec.20078951e.2021.206.69713 accessed 18 June 2025.
[233] Delgado ibid.
[234] Trejo García, J. C., García Ríos, P. E. & Martínez García, M. Á., "Inversión en energía geotérmica para uso doméstico en México," Revista Mexicana de Economía y Finanzas 17.4 (2022) https://www.scielo.org.mx/scielo.php?pid=S1665-53462022000400008&script=sci_arttext accessed 18 June 2025.
[235] Trejo García ibid.
[236] Trejo García ibid.

outcomes.[237] On the one hand, it allows for resource control and autonomy. This can reinforce economic self-reliance and bolster energy independence. With state enterprises at the helm, Mexico can set unified infrastructure goals via mechanisms like PRODESEN, enabling large-scale modernization and potential alignment with long-term social and economic objectives. On the other hand, this limits the renewable transition, excludes civil and private actors, and risks politicisation. Centralized state control marginalizes private renewables and civil-society initiatives, reinforcing fossil fuel dominance and reducing diversity in energy visions and technologies. Narrowly, energy sovereignty frames around hydrocarbons and may privilege political agendas that ignore climate objectives and may ignore decentralized, community-based energy solutions.

As a whole, Sheinbaum's energy policy navigates trade-offs between her pursuit of energy sovereignty and sustainability. Initiatives such as the rooftop solar panels in Mexicalí, the Central de Abasto solar farm, or the expansion of geothermal accessibility demonstrate her focus on practical, emissions-reducing interventions that also aim to lower household energy costs. While this aspect is positive, as a whole, the reform requires improvements regarding strengthening of PEMEX, the CFE, and fossil fuel investment.

Conclusion

As the newly-elected president of Mexico, Claudia Sheinbaum has been making waves in the political and environmental sphere, partly due to the unique perspective she represents in her position. She stands out as a decorated scientist with several PhDs and dozens of published reports under her belt, and a female scholar working in male-dominated fields.[238] Her being the first female president of a North American state is critical, and her professional background as an Environmental Secretary,[239] leader of Mexico City's government,[240] and founding member of Morena ensures her policies, especially environmental ones, are observed internationally.[241]

Mexico faces multiple consequences at the hands of climate change. Citizens living in urban areas—growing in population density at high rates—are particularly

[237] Torres, I. and Niewöhner, J., "Whose energy sovereignty? Competing imaginaries of Mexico's energy future," Energy Research & Social Science 90 (2023) 102919 https://doi.org/10.1016/j.erss.2022.102919 accessed 19 June 2025.
[238] UNAM (n 8).
[239] Oré (n 10).
[240] MND Staff (n 13).
[241] Felbab-Brown and García (n 11).

vulnerable to air pollution.[242] Air pollutants emitted by diesel-fueled vehicles and the industrial sector send out dangerous quantities of CO2, CO, NOx, and black carbon, including the fatal PM2.5 and PM10.[243] Tens of thousands of citizens die prematurely due to these emissions annually, an effect that is especially felt by poorer communities with worse zonal air quality and less access to health care.[244]

Mostly concentrated in the Northern regions, water scarcity is a daily issue faced by up to 30% of households,[245] with rural communities losing significant supplies to the agricultural sector, which uses up 76% of national water resources, and wastes up to 70% of said resources.[246] The misuse of water can also be seen in the declining biodiversity levels in Mexico, due to hundreds of unique animal and plant species that rely on certain water sources that are often left contaminated by industry.[247]

Uniquely complex, the energy and climate landscape is marked by high dependence on imported gas, economic reliance on oil exports, and increasing vulnerability to climate change impacts. The country's energy mix is still dominated by fossil fuels (75%), with clean energy comprising just 25%,[248] supplying a growing energy demand (25% increase since 2000).[249] Electricity prices are increasing, fossil fuel infrastructure continues to be invested in, and the potential for renewable energy is untapped, all under the guise of energy sovereignty.[250]

Nationally, Sheinbaum faces scrutiny due to her close association with her predecessor López Obrador, who some argue has, alongside other Morena members, large influence over the policies Sheinbaum enacts.[251] Despite previous instances where Sheinbaum has shown independence, particularly during her mayorship, her political agenda is often overshadowed by López Obrador's Fourth Transformation, which she promises to continue.[252] Beyond domestic borders, compliance with Trump, and the broader U.S.' demands, challenges Sheinbaum's focus on resource sovereignty and investment in a sustainable transition.[253]

The defining moment in Sheinbaum's career was her contribution to the IPCC 2007 Working Group III report on the mitigation of climate change, in which she was a

[242] Koons (n 17).
[243] C40 (n 20).
[244] Ibarraran (n 23).
[245] Pérez et alia (n 25).
[246] Prodensa (n 29).
[247] Garthwaite (n 32).
[248] Ember (n 57).
[249] Eweade, B. S., Karlilar, S., Pata, U. K., Adeshola, I. & Olaifa, J. O. (n 59)
[250] Wilson (n 72)
[251] Ríos (n 58).
[252] Martínez (n 55)
[253] Maihold (n 113).

contributing author to Chapter 7 on Industry.[254] Chosen because of its international, long-term dimensions, this turning point would mark a before and after in Sheinbaum's career, demonstrative of her scientific prowess and political abilities.

Mexico City, an area that is particularly affected by air pollution and congestion, has seen a remarkable evolution of its public transportation under Sheinbaum and her social mobility approach. From significant implementation of electric vehicles to Metrobús lines,[255] to the new addition of the Cablebús system, to the expansion of bike lanes and the integrated mobility card, the city has reportedly cut millions of tonnes of air pollutants thanks to this transformation.[256] While the results thus far have been commendable, and the current mayor of Mexico City, Clara Brugada, promises to continue Sheinbaum's reform,[257] the city still struggles, as exemplified by an increase in environmental contingencies over the years.[258]

The National Water Plan 2024-2030, announced within two months of Sheinbaum's presidential inauguration, shows particular attention being given to the public sector's access to water resources.[259] A newly enacted General Water Law enshrines water and water justice as human rights, and Sheinbaum's leftist agenda is apparent in the move to re-federalize water, and cut significant concessions. With several infrastructure plans promised to be built, alongside river-cleaning projects, and improving wastewater efficiency, the plan has potential to tackle water scarcity.[260] Since implementation, worry for the ability of the plan to be implemented properly has appeared mostly due to cuts in various environmental agencies, both federal and independent, including a 40% cut for CONAGUA.[261] The funding that has been administered for 2025 regionally[262] also fails to display equity for the respective water scarcity reported per region.[263]

Mexico's energy landscape is undergoing reform aimed at unifying governance of all energy sources.[264] Positive initiatives such as solar energy investments[265] and accessibility to geothermal energy[266] make the reform an improvement to the

[254] Intergovernmental Panel on Climate Change (n 123)
[255] GGGI (n 85).
[256] SEDEMA (n 144).
[257] Alarcón (n 147).
[258] Moreno (n 159).
[259] Gobierno de México (n 100).
[260] Proyectos México (n 103).
[261] CCDA (n 167).
[262] Gobierno de México (n 170).
[263] Young (n 171).
[264] Mexico (n 146)
[265] Gobierno de México (n 151)
[266] Mexico (n 161)

previous landscape. However, strengthening PEMEX and the CFE prioritizes 'energy sovereignty' over a sustainable transition.[267]

It is clear that Sheinbaum frames herself as a climate activist that highlights the climate crisis' influence on socioeconomic inequality. From her involvement in founding the labour party Morena,[268] to her subsequent focus on redistributing resources (mainly away from private corporations),[269] the environmental plans she had proposed since becoming president would categorize her as a social mobility climate leader. She has displayed to have the knowledge needed to be such a climate leader through her academic accomplishments[270] and her contributions to the IPCC.[271] When it comes to living up to her promises, this report finds that Sheinbaum's policies in action display sufficient results to define her as a climate leader. While the presidential policies are still early in development, and are not without controversy,[272] their beginning integration in tandem with the success of her mayoral policy provide confidence in Sheinbaum's ability to bring environmental change in Mexico.[273] While domestic and international observers continue to keep an eye on Sheinbaum's actions, the climate scientist turned president has the potential to turn Mexico into a pillar of environmental protection in the Global South.

[267] Véjares (n 126).
[268] Oré (n 11).
[269] Serra Campillo (n 122).
[270] UNAM (n 8).
[271] IPCC (n 88).
[272] Velasco (n 177).
[273] García (162).

References

The Agility Effect, 'Urban Cable Cars Get off the Ground Urban Cable Car Projects Are on the Rise in France' (*The Agility Effect*, 16 June 2022) <https://www.theagilityeffect.com/en/article/urban-cable-cars-get-off-the-ground/> accessed 12 July 2025

Alarcón A, 'Sustainability Key to Clara Brugada's Urban Mobility Plan' (*Mexico Business*, 8 October 2024) <https://mexicobusiness.news/mobility/news/sustainability-key-clara-brugadas-urban-mobility-plan> accessed 12 July 2025

Ardila OL, 'Presidente de Mexico Propone Reforma a Ley GEOTÉRMICA' (*Think GeoEnergy - Geothermal Energy News*, 16 February 2025) <https://www.piensageotermia.com/presidente-de-mexico-propone-reforma-a-ley-geotermica/> accessed 12 July 2025

Armengol M and Ignacio Á, 'Construcción y Difusión de La Identidad Nacional y La Formación Social Mexicana: Una Reflexión Histórica' (2025) 13 Universita Ciencia 233

Badilla GL and others, 'Correlation Analysis of the Effect of Atmospheric Factors on the Negative Effect on the Health of the Population of Tijuana, Baja California, Mexico' (2023) 05 Asian Journal of Basic Science & Research 67

Balderas Torres A, Lazaro Vargas P and Paavola J, 'The Systemic and Governmental Agendas in Presidential Attention to Climate Change in Mexico 1994–2018' (2020) 11 Nature Communications

BBC News, 'Mexico passes new energy reform lifting 75-year ban on private sector,' (BBC News, 21 December 2013) <https://www.bbc.com/news/world-latin-america-18095241> accessed 15 July 2025.

Behr H, 'How Electric Buses Help Mitigate Climate Change and Improve Air Quality in Megacities: The Cases of Mumbai (India) and São Paulo (Brazil) " Tumi' (*TUMI*, 6 March 2024) <https://transformative-mobility.org/electric-buses-mitigate-climate-change/> accessed 12 July 2025

Bierzwinksy R, González Estrada H and Campuzano C, 'Mexico Enacts New Laws for the Power Sector: Norton Rose Fulbright' (*Project Finance Law*, 27 March 2025) <https://www.projectfinance.law/publications/2025/march/mexico-enacts-new-laws-for-the-power-sector/> accessed 12 July 2025

Bitar DM, 'IS USMCA Good for Mexican Labor? A Preliminary Analysis of USMCA and Labor Market Outcomes in Mexico' (*BrooklynWorks*, 2024) <https://brooklynworks.brooklaw.edu/bjil/vol49/iss2/5/> accessed 12 July 2025

BloombergNEF, Mexico – Climatescope 2024, Global Climatescope, (2024) <https://www.global-climatescope.org/markets/mexico> accessed 14 July 2025
Blue Community Admin, 'Mexico: Water Concessions up 38,8%' (*Blue Community*, 29 January 2025) <https://blue-community.net/2025/01/29/mexico-water-concessions-up-388-in-2-years/> accessed 12 July 2025
BNamericas, 'Water Infrastructure Projects Advance in Mexico' (*BNamericas.com*, 29 May 2025) <https://www.bnamericas.com/en/news/water-infrastructure-projects-advance-in-mexico> accessed 12 July 2025
Brenner L, 'Multi-Stakeholder Platforms and Protected Area Management: Evidence from El Vizcaíno Biosphere Reserve, Mexico' (2019) 17 Conservation and Society 147
Bretón RM and others, 'Short-Term Effects of Atmospheric Pollution on Daily Mortality and Their Modification by Increased Temperatures Associated with a Climatic Change Scenario in Northern Mexico' (2020) 17 International Journal of Environmental Research and Public Health 9219
Bullon Méndez M, 'México: Una Aproximación a La Cuarta Transformación' (*Temas de economía mundial no. 43*, September 2024) <http://www.ciem.cu/publicaciones/2023/Temas%20de%20Econom%C3%ADa%20Mundial%20No.43.pdf> accessed 12 July 2025
C40 Cities, 'Mexico City' (*C40 Cities*, February 2022) <https://www.c40.org/wp-content/uploads/2022/02/Mexico-City-%E2%80%93-Regulating-Industrial-Emissions-English.pdf> accessed 12 July 2025
Calderón-Garcidueñas L and Torres-Jardón R, 'Air Pollution, Socioeconomic Status, and Children's Cognition in Megacities: The Mexico City Scenario' (2012) 3 Frontiers in Psychology
Cano A, Claudia Sheinbaum: presidenta, México (Grijalbo 2023)
CARB, 'Inhabalable Particulate Matter and Health' (*California Air Resources Board*) <https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health> accessed 12 July 2025
Cartier KMS, 'Mexico Will Give U.S.. More Water to Avert More Tariffs' (*Eos*, 29 April 2025) <https://eos.org/research-and-developments/mexico-will-give-u-s-more-water-to-avert-more-tariffs> accessed 12 July 2025
CAT, 'Mexico: Policies & Action' (*Climate Action Tracker*, 12 December 2022) <https://climateactiontracker.org/countries/mexico/> accessed 12 July 2025
Chakraborti L and Voorheis J, 'Is Air Pollution Increasing in Poorer Localities of Mexico? Evidence from PM 2.5 Satellite Data' (2024) 30 Environment and Development Economics 52

Chatziioannou I and others, 'A Clios Analysis for the Promotion of Sustainable Plans of Mobility: The Case of Mexico City' (2020) 10 Applied Sciences 4556
Claudia Sheinbaum, Como jefa de Gobierno, instalamos una central solar, en los techos de la Central de Abasto, (YouTube, 6 July 2024) <https://www.youtube.com/watch?v=bydBgDqeXoI> accessed 15 July 2025.
Coha, 'Democracy in Mexico: The Past, Present, and Future' (*Council on Hemispheric Affairs*, 18 July 2011) <https://coha.org/democracy-in-mexico-the-past-present-and-future/> accessed 12 July 2025
Collins P H and others, 'Intersectionality as Critical Social Theory' (Contemporary Political Theory, 2021) <https://doi.org/10.1057/s41296-021-00490-0> accessed 15 July 2025
CONAGUA and SEMARNAT, 'Comunicado de Prensa Conjunto No132-24B: Acuerdo Nacional Por El Derecho al Agua y La Sustentabilidad' (*Gobierno de México*, 25 November 2024) <https://www.gob.mx/cms/uploads/attachment/file/603254/Comunicado_de_Prensa_092.pdf> accessed 12 July 2025
CONAGUA, 'Presenta Conagua Plan Nacional Hídrico 2024-2030 | Comisión Nacional Del Agua | Gobierno | Gob.Mx' (*Comisión Nacional del Agua*, 21 November 2024) <https://www.gob.mx/conagua/galerias/presenta-conagua-plan-nacional-hidrico-384180> accessed 12 July 2025
Conan R, 'Mexico's Net Zero Goal Pending Ahead of Cop 28 | Argus Media' (*Argus Media*, 22 November 2023) <https://www.argusmedia.com/en/news/2512150-mexicos-net-zero-goal-pending-ahead-of-cop-28> accessed 12 July 2025
Contreras RL, 'Opinion: Mexico's First Woman President Sadly Appears to Be a Puppet of Her Predecessor' (*Times of San Diego*, 1 October 2024) <https://timesofsandiego.com/opinion/2024/09/30/mexicos-first-woman-president-sadly-appears-to-be-a-puppet-of-her-predecessor/> accessed 12 July 2025
Copenhagen Consensus Center, 'Mexico Perspective: Air Pollution' (*Copenhagen Consensus*) <https://copenhagenconsensus.com/publication/mexico-perspective-air-pollution> accessed 12 July 2025
Córdova Morales ÚV, Núñez González MA and Vega Astorga MJ, 'Claudia Sheinbaum y Xóchitl Gálvez: Biografía y Comunicación Política de Dos Mujeres Por La Presidencia de México' (2024) 5 LATAM Revista Latinoamericana de Ciencias Sociales y Humanidades
DeConcini C, Rennicks J and Hyman G, 'Climate Action Opportunities and Setbacks under Trump | World Resources Institute' (*World Resources Institute Insights*, 13 November 2024)

<https://www.wri.org/insights/trump-climate-action-setbacks-opportunities-us> accessed 12 July 2025
Dowley L, 'Mexico and the Sustainable Development Goals' (*openDemocracy*, 22 March 2019) <https://www.opendemocracy.net/en/democraciaabierta/mexico-and-sustainable-development-goals/> accessed 12 July 2025
Drew S, 'Claudia Sheinbaum: Trailblazer or Mexico's next Puppet Leader?' (*Moment Magazine*, 4 June 2024) <https://momentmag.com/claudia-sheinbaum-mexican-election/> accessed 12 July 2025
Duff L, 'Standing up for a Mexico City Ramsar Site' (*World Wetland Network*, 5 November 2023) <https://worldwetland.network/news-en/standing-up-for-a-mexico-city-ramsar-site/> accessed 12 July 2025
Ember, Mexico (Ember Energy, April 2025) <https://ember-energy.org/countries-and-regions/mexico/> accessed 15 July 2025
Encyclopædia Britannica, 'Mexico', (Britannica) <https://www.britannica.com/place/Mexico> accessed 15 July 2025
Esponda I and Esponda I, 'Inequality in Mexico', (UNU-WIDER) <https://www.wider.unu.edu/publication/inequality-mexico-0> accessed 15 July 2025
Eweade BS and others, 'Examining the Asymmetric Effects of Fossil Fuel Consumption, Foreign Direct Investment, and Globalization on Ecological Footprint in Mexico' (2023) 32 Sustainable Development 2899
Franco R, 'Analysis of Mexico City Transportation Systems to Address Climate Change, Traffic, Social Equity, Safety, and Air Pollution Health Risks' (*USF Scholarship: a digital repository @ Gleeson Library | Geschke Center*, May 2021) <https://repository.usfca.edu/capstone/1207/> accessed 12 July 2025
Felbab-Brown V and Paz García D, 'Mexico, López Obrador, and Sheinbaum's Presidential Victory' (Brookings, 10 June 2024) <https://www.brookings.edu/articles/mexico-lopez-obrador-and-sheinbaums-presidential-victory/> accessed 15 July 2025
Fuentes R, 'How Sheinbaum's Energy Policies Could Reshape Mexico's Electricity Sector | Baker Institute' (*Baker Institute for Public Policy*, 2024) <https://www.bakerinstitute.org/research/how-sheinbaums-energy-policies-could-reshape-mexicos-electricity-sector> accessed 12 July 2025
Galeana E, 'Environmental Protection Spending Plunges in Early 2025' (*Mexico Business*, 30 April 2025)

<https://mexicobusiness.news/policyandeconomy/news/environmental-protection-spending-plunges-early-2025> accessed 12 July 2025
Galtung J, 'Peace by Peaceful Means: Peace and Conflict, Development and Civilization' (*Peace Research Institute Oslo (PRIO)*, 1996) <https://www.prio.org/publications/12067> accessed 12 July 2025
Gantz DA, 'AMLO's Energy and Investment Policies Will Make Mexico Poor Again' (*Baker Institute*, 4 August 2022) <https://www.bakerinstitute.org/research/amlos-energy-and-investment-policies-will-make-mexico-poor-again> accessed 12 July 2025
García JL, 'Poison in the Rivers, the Challenge of Restoring Life in a Six-Year Period' (*Causanatura Media*, 19 November 2024) <https://causanaturamedia.com/en/notas/poison-in-the-rivers-the-challenge-of-restoring-life-in-a-six-year-period> accessed 12 July 2025
García K, 'Varias Ong Exigen Revisión de Política Sectorial Energética' (*El Economista*, 18 June 2020) <https://www.eleconomista.com.mx/empresas/Varias-ONG-exigen-revision-de-politica-sectorial-energetica-20200618-0012.html> accessed 12 July 2025
García M, 'CDMX Es Reconocida Como Ciudad Saludable Por Sus Políticas de Movilidad' (*Capital 21*, 17 March 2023) <https://www.capital21.cdmx.gob.mx/noticias/?p=38353> accessed 12 July 2025
Garrison C and Graham D, 'Mexico City Metro Exposes "Achilles Heel" of Mayor's Presidential Dreams | Reuters' (*Reuters*, 23 January 2023) <https://www.reuters.com/world/americas/mexico-city-metro-exposes-achilles-heel-mayors-presidential-dreams-2023-01-23/> accessed 12 July 2025
Garthwaite J, 'Researchers Identify Human Activities as Drivers of Biodiversity Decline in Central Mexico's Reserves' (*Phys.org*, 15 February 2024) <https://phys.org/news/2024-02-human-drivers-biodiversity-decline-central.html> accessed 12 July 2025
GGGI, 'Mexico City Transits to E-Mobility Launching 50 e-Buses with the Support of Zebra and GGGI' (*Global Green Growth Institute*, 21 February 2023) <https://gggi.org/mexico-city-transits-to-e-mobility-launching-50-e-buses-with-the-support-of-zebra-and-gggi/> accessed 12 July 2025
GOB MX, Explicación ampliada de la Reforma Energética, Gobierno de México, <https://www.gob.mx/cms/uploads/attachment/file/10233/Explicacion_ampliada_de_la_Reforma_Energetica1.pdf> accessed 14 July 2025.
GOB MX, 'Programa Especial de Cambio Climático 2021-2024 | Secretaría de Medio Ambiente y Recursos Naturales | Gobierno | Gob.Mx' (*Gobierno de México*, 8 November 2021) <https://www.gob.mx/semarnat/documentos/programa-especial-de-cambio-climatico-2021-2024> accessed 12 July 2025

Gobierno de la Ciudad de México PC 21, 'Gobierno CDMX Duplicó El Número de Ciclovías En 4 Años' (*Capital 21*, 27 September 2022) <https://www.capital21.cdmx.gob.mx/noticias/?p=33327> accessed 12 July 2025

Gobierno de la Ciudad de México, 'Programa Integral de Movilidad 2019-2024 - SEMOVI - CDMX' (*Gobierno de la Ciudad de México*, 7 June 2022) <https://www.semovi.cdmx.gob.mx/storage/app/media/PIM-2019-2024_.pdf> accessed 12 July 2025

Green Motion, 'Mexico City Is the World's Most Traffic Congested ...' (*Green Motion*, 2017) <https://greenmotion.com/news/mexico-city-is-the-worlds-most-traffic-congested-city> accessed 12 July 2025

Gridneff I and Murray C, 'Mexico Pledges to Shrink Trade Deficit with China in Nod to Donald Trump' (*Financial Times*, 4 February 2025) <https://www.ft.com/content/2956ee32-be39-4544-a9b1-d183b173d809> accessed 12 July 2025

Gutiérrez Negrín LCA and others, 'Geothermal Energy in Mexico: Update and Perspectives' (*Proceedings World Geothermal Congress*, 2020) <https://www.researchgate.net/publication/343111483_Geothermal_energy_in_Mexico_update_and_perspectives> accessed 12 July 2025

Helfgott A, 'The Structure of Mexico's Government – Explainer' (Wilson Center, 24 October 2023) <https://www.wilsoncenter.org/article/structure-mexicos-government-explainer> accessed 15 July 2025

Hilaire V, 'Roofs of Mexico City's Massive Food Market Will Power Public Buses' (*Bloomberg City Lab*, 3 October 2024) <https://www.bloomberg.com/news/articles/2024-10-03/mexico-city-public-buses-will-be-powered-by-food-market-solar-panels> accessed 12 July 2025

Howard C, 'Latin Analysis: Claudia Sheinbaum, AMLO's Puppet or Foreign Policy Progressive?' (*Modern Treatise*, 30 January 2025) <https://www.moderntreatise.com/the-americas/2025/1/16/latin-analysis-claudia-sheinbaum-amlos-puppet-or-foreign-policy-progressive> accessed 12 July 2025

Huberts A and others, 'Making Scarcity "Enough": The Hidden Household Costs of Adapting to Water Scarcity in Mexico City' (2023) 2 PLOS Water

Hussain M, 'US-Mexico Water Conflict: A Study of Climatic Implications for the Central American Region' (2024) 4 Journal of Social Sciences Review 224

Ibarrarán ME, 'Climate's Long-Term Impacts on Mexico City's Urban Infrastructure' (*Cities and Climate Change: Global Report on Human Settlements 2011*, 2011) <https://unhabitat.org/sites/default/files/2012/06/GRHS2011CaseStudyChapter04Mexico.pdf> accessed 12 July 2025

IEA, 'Mexico - Countries & Regions - IEA' (*International Energy Agency*) <https://www.iea.org/countries/mexico> accessed 12 July 2025

Imaz M and Sheinbaum C, 'Science and Technology in the Framework of the Sustainable Development Goals' (2017) 14 World Journal of Science, Technology and Sustainable Development 2

Instituto de Ingeneria, 'Claudia Sheinbaum Pardo ' (*Claudia Sheinbaum Pardo*) <https://www.iingen.unam.mx/es-mx/Investigacion/Academicos/Paginas/CSheinbaumP.aspx> accessed 12 July 2025

Intergovernmental Panel on Climate Change [2007] Climate Change 2007: Mitigation of Climate Change. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change

International Trade Administration, Mexico: Renewable Energy, (Country Commercial Guides, 5 November 2023) <https://www.trade.gov/country-commercial-guides/mexico-renewable-energy> accessed 14 July 2025.

IPCC Secretariat, 'Statement about the 2007 Nobel Peace Prize' (*IPCC*, 29 October 2012) <https://archive.ipcc.ch/pdf/nobel/Nobel_statement_final.pdf>

ITA, 'Mexico Energy Sector Reform' (*International Trade Administration*, April 2025) <https://www.trade.gov/market-intelligence/mexico-energy-sector-reform> accessed 12 July 2025

Jiménez Cisneros, B. E. (Ed.), La contaminación ambiental en México: perspectivas sobre aire, agua y suelo (Limusa Noriega Editores, revised edn 2019) <https://d1wqtxts1xzle7.cloudfront.net/60313318/ART-RE-31-0120190816-83177-e18964-libre.pdf> accessed 16 June 2025

Kirkpatrick C, Parker D and Zhang Y-F, 'An Empirical Analysis of State and Private Sector Provision of Water Services in Africa' (2006) 143 World Bank Economic r+Review

Koons E, 'Air Pollution in Mexico: Challenges and Solutions' (*Climate Impacts Tracker Asia*, 30 May 2024) <https://www.climateimpactstracker.com/air-pollution-in-mexico/> accessed 12 July 2025

Kühne K and others, '"Carbon Bombs" - Mapping Key Fossil Fuel Projects' (2022) 166 Energy Policy 112950

La Octava Digital, 'Sheinbaum: AMLO No Tendrá Teléfono Rojo Desde Palenque Para Dar Instrucciones' (*Facebook*, 27 May 2024) <https://www.facebook.com/laoctavadigital/videos/sheinbaum-amlo-no-tendr%C3%A1-tel%C3%A9fono-rojo-desde-palenque-para-dar-instrucciones/1223384912431797/> accessed 12 July 2025

Lara M, 'Mexico: Environmental Sustainability in the 2025–2030 National Development Plan' (*BBVA Research*, 26 May 2025)

<https://www.bbvaresearch.com/en/publicaciones/mexico-environmental-sustainability-in-the-20252030-national-development-plan/> accessed 12 July 2025
Lindwall C, 'IPCC Climate Change Reports: Why They Matter to Everyone on the Planet' (*Natural Resources Defense Council*, 24 January 2022) <https://www.nrdc.org/stories/ipcc-climate-change-reports-why-they-matter-everyone-planet> accessed 12 July 2025
López Porras G and Ciesielczuk J, 'Country Report: Mexico - Lessons Learned from a Constitutional Controversy on the Mexican Water Management' [2021] IUCN AEL Journal of Environmental Law
Mahady JA and others, 'Mapping Opportunities for Transportation Electrification to Address Social Marginalization and Air Pollution Challenges in Greater Mexico City' (2020) 54 Environmental Science & Technology 2103
Maihold G, 'Mexico - From a Short Nearshoring Boom to U.S. "Security Shoring"' [2025] Stiftung Wissenschaft und Politik
Mares F, 'Government Unveils National Water Plan Amid Conagua Budget Cuts' (*Mexico Business*, 25 November 2024) <https://mexicobusiness.news/infrastructure/news/government-unveils-national-water-plan-amid-conagua-budget-cuts> accessed 12 July 2025
Martínez AI, 'Mexico's Sheinbaum May Be No Puppet but Her Mentor Looms Large | Reuters' (*Reuters*, 27 May 2024) <https://www.reuters.com/world/americas/mexicos-sheinbaum-may-be-no-puppet-her-mentor-looms-large-2024-05-27/> accessed 12 July 2025
Martínez C, 'Destaca Propuesta Ambiental de AMLO' (*El Norte*, 16 May 2018) <https://www.elnorte.com/aplicaciones/articulo/default.aspx?id=1395649> accessed 12 July 2025
Martínez Espinoza, Manuel I. "La política social de la cuarta transformación en México. Un balance del primer año de gobierno de López Obrador." (Revista Española de Ciencia Política, no. 55, March 2021) <https://doi.org/10.21308/recp.55.05>
MBN Staff, 'Sheinbaum's Green Legacy: Environmental Leadership in Mexico City' (*Mexico Business*, 31 January 2024) <https://mexicobusiness.news/policyandeconomy/news/sheinbaums-green-legacy-environmental-leadership-mexico-city> accessed 12 July 2025
Medel Ramírez C, 'Análisis Técnico al Documento Del Proyecto de Transformación Nacional 2024–2030 En México: Modelo Lógico-Matemático Para La Evaluación de Coherencia y Contradicciones En Políticas Públicas' [2024] Desafíos Sociales del Siglo XXI
Metro CDMX, 'Cifras de Operación' (*Gobierno de la Ciudad de México*) <https://metro.cdmx.gob.mx/operacion/cifras-de-operacion> accessed 12 July 2025

Metrobús CDMX, 'Recibe Ciudad de México Mención Honorífica En Los "Sustainable Transport Award" Por Proyectos de Movilidad Realizados Por La Hoy Presidenta de México, Claudia Sheinbaum Pardo' (*Metrobús de la Ciudad de México*, 7 January 2025) <https://www.metrobus.cdmx.gob.mx/comunicacion/nota/MB-070125SUSTAINABLETRANSPORTAWARD> accessed 12 July 2025

MND Staff, 'A Desert State Takes Center Stage in Mexico's Clean Energy Plans' (*Mexico News Daily*, 13 December 2024) <https://mexiconewsdaily.com/politics/mexico-clean-energy/> accessed 12 July 2025

Montaño EA, 'Presentes-Pasados Del 68 Mexicano. Una Historización de Las Memorias Públicas Del Movimiento Estudiantil, 1968-2007' (*Presentes-pasados del 68 mexicano. Una historización de las memorias públicas del movimiento estudiantil, 1968-2007* | *Revista Mexicana de Sociología*, Spring 2009) <https://revistamexicanadesociologia.unam.mx/index.php/rms/article/view/17750> accessed 12 July 2025

Montse Hidalgo Pérez PSJF, '¿Quién Ha Votado a Sheinbaum? ¿Y a Gálvez? Sus Apoyos Por Edad, Sexo e Ingresos' (*El País México*, 3 June 2024) <https://elpais.com/mexico/elecciones-mexicanas/2024-06-03/quien-ha-votado-a-sheinbaum-y-a-galvez-sus-apoyos-por-edad-sexo-e-ingresos.html> accessed 12 July 2025

MORENA, 'Proyecto de Nación 2024 - 2030' (*Movimiento Regeneración Nacional*, 20 February 2024) <https://morenademocracia.mx/wp-content/uploads/2024/02/Proyecto-de-Nacion-2024-2030-Definitivo.pdf> accessed 12 July 2025

Moreno A, 'Government Actions to Tackle Air Pollution in Mexico City' (*Mexico Business*, 3 March 2025) <https://mexicobusiness.news/health/news/government-actions-tackle-air-pollution-mexico-city> accessed 12 July 2025

Muñoz Guízar E and Zavala González G, 'Mexico Implements Unified Digital Portal for Water Concessions' (*Pérez-Lorca*, 28 March 2025) <https://www.perezllorca.com/wp-content/uploads/2025/03/Legal-Briefing-Mexico-Implements-Unified-Digital-Portal-for-Water-Concessions.pdf> accessed 12 July 2025

Murray C, 'Mexico's Claudia Sheinbaum Woos Donald Trump with Security Shake-Up' (Financial Times, 19 April 2025) <https://www.ft.com/content/3877cfcb-70d8-4c96-8179-f9c89426a772> accessed 15 July 2025

NDC Partnership, 'Mexico' <https://ndcpartnership.org/country/mex> accessed 15 July 2025

Noticias Ambientales, 'The Valley of Mexico City Faces an Environmental Crisis: 5 Ozone Contingencies in 2025 That Need to Be Addressed' (*Noticias Ambientales*, 23 May 2025) <https://noticiasambientales.com/environment-en/the-valley-of-mexico-city-faces-an-environmental-crisis-5-ozone-contingencies-in-2025-that-need-to-be-addressed/>

Novick B, 'The Unavoidable Crisis: Climate Change in China and Mexico' (2021) 12 Global Majority E-Journal 41

OECD, 'Mexico | OECD Inventory of Support Measures for Fossil Fuels: Country Notes | OECD Ilibrary' (*Organisation for Economic Co-operation and Dev elopment*, June 2021) <https://www.oecd-ilibrary.org/environment/oecd-companion-to-the-inventory-of-support-measures-for-fossil-fuels-country-notes_21a3c05a-en> accessed 12 July 2025

Oré D, 'Mexico's Sheinbaum: From Activist to Climate Scientist to Presidential Frontrunner | Reuters' (*Reuters*, 31 May 2024) <https://www.reuters.com/world/americas/mexicos-sheinbaum-activist-climate-scientist-presidential-frontrunner-2024-05-31/> accessed 12 July 2025

Pacheco-Treviño S and Manzano-Camarillo MG, 'Review of Water Scarcity Assessments: Highlights of Mexico's Water Situation' (2024) 11 WIREs Water

PEMEX, 'About Pemex' (*Petróleos Mexicanos*) <https://www.pemex.com/en/about-pemex/Paginas/default.aspx> accessed 12 July 2025

Petersen G and Somuano F, 'Mexican De-Democratization? Pandemic, Hyper-Presidentialism and Attempts to Rebuild a Dominant Party System' [2021] Revista de ciencia política (Santiago) 353

Presidencia de la República, '100 Compromisos Para El Segundo Piso de La Cuarta Transformación | Presidencia de La República | Gobierno | Gob.Mx' (*Gobierno de México*, 3 October 2024) <https://www.gob.mx/presidencia/documentos/100-compromisos-para-el-segundo-piso-de-la-cuarta-transformacion> accessed 12 July 2025

Probst O, 'Clean Energy and Carbon Emissions in Mexico's Electric Power Sector: Past Performance and Current Trend' (2024) 17 Energies

Prodensa, 'Water Management and Industrial Development in Mexico: A Strategic Overview' (*Home*, 1 April 2025) <https://www.prodensa.com/insights/blog/water-management-and-industrial-development-in-mexico-a-strategic-overview> accessed 12 July 2025

Proyectos México, 'Water' (*Proyectos México*, May 2025) <https://www.proyectosmexico.gob.mx/en/how-mexican-infrastructure/investment-cycle/hydraulic/> accessed 12 July 2025

Ramírez González J E, 'Las mediaciones de la prensa digital sobre Claudia Sheinbaum y Xóchitl Gálvez durante la precampaña 2024' (Centro de Estudios de Opinión y Análisis, Universidad Veracruzana, Región Xalapa, September 2024) <https://www.uv.mx/eeo/files/2024/09/Las-mediaciones-de-la-prensa-digital-sobre-Claudia-Sheinbaum-y-Xochitl-Galvez-durante-la-precampana-2024-1.pdf>

Ravindranath NH, 'IPCC: Accomplishments, Controversies and Challenges' (2010) 99 Current Science 26

Reuters, 'Mexico Negotiating with Its Northern States to Send More Water to Us, Sheinbaum Says | Reuters' (*Reuters*, 15 April 2025) <https://www.reuters.com/world/americas/mexican-govt-negotiating-with-states-about-water-they-can-send-us-under-deal-2025-04-15/> accessed 12 July 2025

Rico B and others, 'Heavily Polluted Tijuana River Drives Regional Air Quality Crisis' [2024] ChemRxiv

Rivera Delgado DP, Díaz López FJ and Carrillo González G, 'Transición Energética, Innovación y Usos Directos de Energía Geotérmica En México: UN Análisis de Modelado Temático' (2021) 52 Problemas del Desarrollo. Revista Latinoamericana de Economía

Rodríguez L, 'Sheinbaum Builds Green-Policy Record as Mayor' (*EcoAméricas*, April 2023) <https://www.ecoamericas.com/issues/article/2023/4/055A7E78-7238-42D2-8DC7-C673DDBFC4D0> accessed 12 July 2025

Rodríguez T and Alexis M, 'Propuesta de Plan Maestro de Movilidad Ciclista Para La Alcaldía Venustiano Carranza' (*Universidad nacional Autónoma de México*, 2023) <https://ru.dgb.unam.mx/bitstream/20.500.14330/TES01000846701/3/0846701.pdf> accessed 12 July 2025

Rojas Silva HR, 'Anotaciones Del Proyecto de Presupuesto Federal 2025 Para Agua' (*La Jornada Estado de México*, 19 November 2024) <https://lajornadaestadodemexico.com/anotaciones-del-proyecto-de-presupuesto-federal-2025-para-agua/> accessed 12 July 2025

Rosegrant MW, Schleyer RG and Yadav SN, 'Reforming Water Allocation Policy through Markets in Tradable Water Rights: Lessons from Chile, Mexico, and California' (2005) 291 32 Cuadernos de Economía 291

Rueda R, García C and Salinas M, 'Mexico's National Agreement for the Human Right to Water and Sustainability Published in DOF: Insights' (*Holland & Knight*, 20 December 2024) <https://www.hklaw.com/en/insights/publications/2024/12/acuerdo-nacional-por-el-derecho-humano-al-agua-y-la-sustentabilidad> accessed 12 July 2025

Ríos V, 'How Claudia Sheinbaum Will Be Different from AMLO' (*Americas Quarterly*, 4 June 2024)

<https://www.americasquarterly.org/article/how-claudia-sheinbaum-will-be-different-from-amlo/> accessed 12 July 2025

Schifter I, Díaz L and López-Salinas E, 'Hazardous Air Pollutants from Mobile Sources in the Metropolitan Area of Mexico City' (2005) 55 Journal of the Air & Waste Management Association 1289

Secretaría de Energía, 'Programa Sol Del Norte' (*Gobierno de México*, 2025) <https://soldelnorte.energia.gob.mx/> accessed 12 July 2025

Secretaría de Hacienda y Crédito Público, 'Tabla de Asignaciones Por Entidad Federativa 2025' (*Gobierno de México*, 2025) <https://www.gob.mx/cms/uploads/attachment/file/981431/TABLA_ASIGNACIONES_EDOS_2025_0001.pdf>

Secretaría de Movilidad de la CDMX, 'Ecobici' (*Gobierno de la Ciudad de México*, 9 May 2025) <https://ecobici.cdmx.gob.mx/conoce-sistema/> accessed 12 July 2025

Secretaría de Obras y Servicios de la CDMX., 'La Bicicleta Nos Une En La Justicia Social: Claudia Sheinbaum' (*Gobierno de la Ciudad de México*) <https://www.obras.cdmx.gob.mx/comunicacion/nota/la-bicicleta-nos-une-en-la-justicia-social-claudia-sheinbaum> accessed 12 July 2025

Secretaría del Medio Ambiente de la Ciudad de México, 'Progress Report: Environmental and Climate Change Program' (*Gobierno de la Ciudad de México*, June 2022) <https://agenda2030.cdmx.gob.mx/wp-content/uploads/2022/06/Progress-Report-Environmental-And-Climate-Change-Program-For-Mexico-City-2019-2024.pdf> accessed 12 July 2025

SEDEMA, 'Supera La Ciudad de México Meta En Reducción de Millones de Toneladas de Compuestos y Gases Causantes Del Cambio Climático' (*Secretaría del Medio Ambiente*, 2025) <https://www.sedema.cdmx.gob.mx/comunicacion/nota/supera-la-ciudad-de-mexico-meta-en-reduccion-de-millones-de-toneladas-de-compuestos-y-gases-causantes-del-cambio-climatico> accessed 12 July 2025

Serra Campillo JC, Colunga Victoria JM and Reyes López CA, 'The Impact of the New Water Regulation. - Basham' (*Basham*, 9 January 2025) <https://basham.com.mx/en/the-impact-of-the-new-water-regulation/> accessed 12 July 2025

Sheinbaum C, Ruíz BJ and Ozawa L, 'Energy Consumption and Related CO2 Emissions in Five Latin American Countries: Changes from 1990 to 2006 and Perspectives' (2011) 36 Energy 3629

Silva Quiroz R, 'Atmospheric Blockages as Trigger of Environmental Contingencies in Mexico City' (*Heliyon*, 24 June 2019)

<https://www.atmosfera.unam.mx/atmospheric-blockages-as-trigger-of-environmental-contingencies-in-mexico-city/> accessed 12 July 2025
Sisto NP and others, 'Climate Threats, Water Supply Vulnerability and the Risk of a Water Crisis in the Monterrey Metropolitan Area (Northeastern Mexico)' (2015) 91 Physics and Chemistry of the Earth, Parts A/B/C 2
Solís JC and Sheinbaum C, 'Energy Consumption and Greenhouse Gas Emission Trends in Mexican Road Transport' (2013) 17 Energy for Sustainable Development 280
Statista, Household electricity price in Mexico from October 2020 to September 2024 (U.S. cents per kWh), Statista, <https://www.statista.com/statistics/1372387/household-electricity-price-mexico/> accessed 14 July 2025.
Statista, Electricity prices in selected countries (USD cents per kWh), Statista, <https://www.statista.com/statistics/263492/electricity-prices-in-selected-countries/> accessed 14 July 2025.
Steinvorth A, 'Pipeline of Electric Bus Projects in Latin America' (*C40 Cities*, April 2023) <https://www.c40.org/wp-content/uploads/2023/04/FINAL-Pipeline-of-Electric-Bus-Projects-in-Latin-America-compressed.pdf> accessed 12 July 2025
Surrer T, 'The Carbon Footprint on the Cable Car' (*Seilbahnen International*, 15 November 2022) <https://www.simagazin.com/en/si-urban-en/topics-urban/urban/die-co2-bilanz-am-seil-die-seilbahn-im-vergleich-zu-alternativen-verkehrsmitteln/> accessed 12 July 2025
Tandon A, 'Analysis: How the Diversity of IPCC Authors Has Changed over Three Decades' (*Carbon Brief*, 24 August 2023) <https://www.carbonbrief.org/analysis-how-the-diversity-of-ipcc-authors-has-changed-over-three-decades/> accessed 12 July 2025
Tello EJG, 'Current Regulation of Geothermal Energy in Mexico' (*Lexology*, 31 October 2022) <https://www.lexology.com/library/detail.aspx?g=a6c1422f-45ba-4caf-af3b-03dee310758c> accessed 12 July 2025
Torres I and Niewöhner J, 'Whose Energy Sovereignty? Competing Imaginaries of Mexico's Energy Future' (2023) 96 Energy Research & Social Science 102919
Torres-Anguiano E and others, 'SARS-COV-2: Air Pollution Highly Correlated to the Increase in Mortality. the Case of Guadalajara, Jalisco, México' (2023) 8 Infectious Disease Modelling 445
Traviss M, 'The Environmental and Public Health Benefits of Electric Buses' (*Innovation News Network*, 9 August 2024) <https://www.innovationnewsnetwork.com/the-environmental-and-public-health-benefits-of-electric-buses/50046/> accessed 12 July 2025

Trejo García JC, García Ríos PE and Martínez García MÁ, 'Inversión En Energía Geotérmica Para Uso Doméstico En México' (*Revista mexicana de economía y finanzas*) <https://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S1665-53462022000400008&lng=es&nrm=iso&tlng=es> accessed 12 July 2025

UNEP, 'Once Threatened, Mexico's "Green Jewel" Has Become a Model of Conservation' (*UN Environment Programme*) <https://www.unep.org/news-and-stories/story/once-threatened-mexicos-green-jewel-has-become-model-conservation> accessed 12 July 2025

United Nations Development Programme (UNDP), 'Climate Promise: Mexico' (21 November 2023) <https://climatepromise.undp.org/what-we-do/where-we-work/mexico> accessed 15 July 2025

United Nations Development Programme (UNDP), 'Human Development Index (HDI)' <https://hdr.undp.org/data-center/human-development-index#/indicies/HDI> accessed 15 July 2025

University of Notre Dame, 'Notre Dame Global Adaptation Initiative (ND-GAIN) Country Index' <https://gain.nd.edu/our-work/country-index/> accessed 15 July 2025

UNOPS, 'Modernizing Transportation in Mexico City' (*UN Office for Project Services*, 2023) <https://www.unops.org/news-and-stories/stories/modernizing-transportation-in-mexico-city> accessed 12 July 2025

U.S. Energy Information Administration (EIA), 'China's Solar Capacity Installations Grew Rapidly in 2024' (*US Department of Energy*, 2025) <https://www.eia.gov/todayinenergy/detail.php?id=65562> accessed 12 July 2025

Vectio, 'How a Ropeway Can Be a Sustainable Solution to Improve Urban Mobility: The Success of Cablebus in Mexico City' (*Vectio*, 26 September 2024) <https://vectio.com/blog/how-a-ropeway-can-be-a-sustainable-solution-to-improve-urban-mobility-the-success-of-cablebus-in-mexico-city/> accessed 12 July 2025

Velasco OG, 'Alertan Expertos Sobre Reducción Presupuestal Para Sector Agua: Proponen Se Reconsidere La Asignación Planteada En El Proyecto Del PEF 2025' (*Consejo Consultivo del Agua*, 21 November 2024) <https://aguas.org.mx/cca/comunicacion/alertan-expertos-sobre-reduccion-presupuestal-para-sector-agua-proponen-se-reconsidere-la-asignacion-planteada-en-el-proyecto-del-pef-2025/> accessed 12 July 2025

Véjares M and others, 'Geopolitical Brief No. 4: Las Oportunidades de Política Industrial Verde de México En El Nuevo Panorama Geopolítico' (*Zero Policy Lab*, April 2025)

<https://static1.squarespace.com/static/64ca7e081e376c26a5319f0b/t/680e884abfd3ec5b51dc7216/1745782859510/GB04+-+Mexico+-+Final.pdf> accessed 12 July 2025

Vivis V, 'Chapter: Mexico' in Intro to Comparative Government and Politics (Claremont Colleges Pressbooks) <https://pressbooks.claremont.edu/id001p012/chapter/vivis-chapter/> accessed 15 July 2025

Wade L, 'Can This Environmental Engineer—Now Elected Mayor—Fix Mexico City? | Science | AAAS' (*Science*, June 2018) <https://www.science.org/content/article/can-environmental-engineer-poised-become-mayor-fix-mexico-city> accessed 12 July 2025

Wilson Center, La nueva reforma energética de México, Wilson Center, <https://www.wilsoncenter.org/sites/default/files/media/documents/publication/la_nueva_reforma_energetica_de_mexico.pdf> accessed 14 July 2025

WorldAtlas, Ecological Regions of Mexico <https://www.worldatlas.com/articles/ecological-regions-of-mexico.html> accessed 15 July 2025

World Bank Group, 'Chile Moves toward More Sustainable and Equitable Water Resources Management with World Bank Support' (*World Bank*, 12 June 2024) <https://www.worldbank.org/en/news/press-release/2024/06/10/chile-avanza-hacia-una-gesti-n-m-s-sostenible-y-equitativa-de-los-recursos-h-dricos-con-apoyo-del-banco-mundial> accessed 12 July 2025

World Resources Institute, 'Climate Watch (CAIT): Country Greenhouse Gas Emissions Data' (10 April 2014) <https://www.wri.org/data/climate-watch-cait-country-greenhouse-gas-emissions-data> accessed 15 July 2025

Young SL, 'Water Insecurity in Mexico' (*Buffett Institute for Global Affairs - Northwestern University*, 3 March 2025) <https://buffett.northwestern.edu/news/media-resources.html> accessed 12 July 2025

——, 'Coca-Cola Mexico Returns More than 4 Million Cubic Meters of Unused Water' (*Mexico News Daily*, 3 June 2025) <https://mexiconewsdaily.com/news/coca-cola-mexico-commits-returning-more-water/> accessed 12 July 2025

——, 'Five Reasons Why Sheinbaum Won in Mexico' (*EL PAÍS English*, 10 June 2024) <https://english.elpais.com/international/2024-06-10/five-reasons-why-sheinbaum-won-in-mexico.html> accessed 12 July 2025

——, 'Industry' [2015] Climate Change 2014: Mitigation of Climate Change 739

——, ‘Ley De Geotermia’ (*Gobierno de México*, 18 March 2025) <https://www.diputados.gob.mx/LeyesBiblio/pdf/LGeo.pdf> accessed 12 July 2025
——, ‘Ley Del Sector Eléctrico. DOF 18-03-2025’ (*Gobierno de México*, 18 March 2025) <https://www.diputados.gob.mx/LeyesBiblio/ref/lse/LSE_orig_18mar25.pdf> accessed 12 July 2025
——, ‘Mexico City Recognized for Advancing Sustainable Urban Mobility’ (*Mexico Business*, 8 January 2025) <https://mexicobusiness.news/mobility/news/mexico-city-recognized-advancing-sustainable-urban-mobility> accessed 12 July 2025
——, ‘Mexico Launches National Water Cleanup Effort’ (*Mexico Business*, 24 March 2025) <https://mexicobusiness.news/agribusiness/news/mexico-launches-national-water-cleanup-effort> accessed 12 July 2025
——, ‘Mexico: 17 Water Projects Planned’ (*Blue Community*, 13 March 2025) <https://blue-community.net/2025/03/13/mexico-17-water-projects-planned/> accessed 12 July 2025
——, ‘Mexico’s Gas Dependence vs. Renewable Potential: Ember’ (*Mexico Business*, 29 May 2025) <https://mexicobusiness.news/energy/news/mexicos-gas-dependence-vs-renewable-potential-ember> accessed 12 July 2025
——, ‘Movilidad Inteligente En La Ciudad’ (*Gobierno CDMX*, 7 July 2022) <https://gobierno.cdmx.gob.mx/noticias/movilidad-inteligente-en-la-ciudad/> accessed 12 July 2025
——, ‘Muévete En Bici’ (*Gobierno de la Ciudad de México*) <https://www.semovi.cdmx.gob.mx/tramites-y-servicios/mi-bici/muevete-en-bici> accessed 12 July 2025
——, ‘Plan Nacional de Desarrollo 2025-2030’ (*Gobierno de México*, April 2025) <https://www.gob.mx/cms/uploads/attachment/file/966672/pnd-completo-2025-2030.pdf> accessed 12 July 2025
——, ‘Plan Sonora: Energías Sustentables y Economía de Prosperidad Compartida’ (*Gobierno de México*, 10 February 2025) <https://www.gob.mx/cms/uploads/attachment/file/977416/Plan_Sonora_Dif_100225_Red_100225_compressed.pdf> accessed 12 July 2025
——, ‘Presidenta Claudia Sheinbaum Presenta Plan Nacional Hídrico Que Concibe al Agua Como Un Derecho y Un Bien de La Nación | Presidencia de La República | Gobierno | Gob.Mx’ (*Gobierno de México*, 24 November 2024) <https://www.gob.mx/presidencia/prensa/presidenta-claudia-sheinbaum-presenta-plan-nacional-hidrico-que-concibe-al-agua-como-un-derecho-y-un-bien-de-la-nacion> accessed 12 July 2025

——, 'Sader Visits Tula to Oversee Water Treatment' (*Mexico Business*, 10 June 2025) <https://mexicobusiness.news/agribusiness/news/sader-visits-tula-oversee-water-treatment> accessed 12 July 2025
——, 'Sheinbaum Is Recognized for Global Leadership in Sustainability' (*Mexico Business*, 14 November 2024) <https://mexicobusiness.news/policyandeconomy/news/sheinbaum-recognized-global-leadership-sustainability> accessed 12 July 2025
——, 'Versión Estenográfica. Banderazo Del Programa "Sol Del Norte" de Paneles Fotovoltaicos | Presidencia de La República | Gobierno | Gob.Mx' (*Gobierno de México*, 29 March 2025) <https://www.gob.mx/presidencia/articulos/version-estenografica-banderazo-del-programa-sol-del-norte-de-paneles-fotovoltaicos> accessed 12 July 2025
——, 'Versión Estenográfica. Banderazo Del Programa "Sol Del Norte" de Paneles Fotovoltaicos | Presidencia de La República | Gobierno | Gob.Mx' (*Gobierno de México*, 29 March 2025) <https://www.gob.mx/presidencia/articulos/version-estenografica-banderazo-del-programa-sol-del-norte-de-paneles-fotovoltaicos> accessed 12 July 2025