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Latin America facing the energy transition

Latin America facing the energy transition

Abstract:

According to the World Meteorological Organization's greenhouse gas bulletin, in 2019, the levels of these heat-trapping gases in the atmosphere have reached a record high again. Reversing the trend will require more drastic reductions, in less time and with greater investments. The economic transition towards a sustainable, low-carbon growth model could generate a turnover of 26 trillion dollars (millions of millions) until 2030.

The development potential of renewable energies in Ibero-America is one of the most favorable and profitable in the world. Looking at the whole of the continent we discover a region especially endowed and blessed, once again, by the abundance of resources.

However, investors' preferences for promoting renewable energy in Latin America have deteriorated in the last four years. It appears that the great opportunities of clean energy will temporarily pass by and will not contribute to the post-pandemic economic recovery.

Keywords:

Paris Agreement, Climate Ambition Alliance, renewable energies, Levelized Cost of Energy LCOE, photovoltaic potential, Federal Electricity Commission, National Energy Commission.

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Iberoamérica frente a la transición energética

Resumen:

En 2019, la Organización Meteorológica Mundial anunciaba que los niveles de gases efecto invernadero habían alcanzado de nuevo un nivel récord. Revertir la tendencia, para limitar el aumento de la temperatura, exigirá reducciones más drásticas, en menos tiempo y con mayores inversiones. Simultáneamente, se estima que la transición económica hacia un modelo de crecimiento sostenible y bajo en carbono podrían generar un volumen de negocio que oscilaría entre los 26 y los 10 billones de dólares (millones de millones) hasta 2030, dependiendo del escenario elegido.

El potencial de desarrollo de las energías renovables en Iberoamérica es de los más favorables y rentables del mundo. Mirando al conjunto del continente descubrimos una región especialmente dotada y bendecida, una vez más, por la abundancia de recursos.

Sin embargo, las preferencias de los inversores por promover las energías renovables en Iberoamérica se han ido diluyendo en los últimos cuatro años. Parece que las grandes oportunidades de las energías limpias pasaran de largo temporalmente y no contribuirán a la recuperación económica postpandemia.

Palabras clave:

Acuerdo de París, Alianza de Ambición Climática, energías renovables, Levelized Cost of Energy LCOE, potencial fotovoltaico, Comisión Federal de Electricidad, Comisión Nacional de la Energía.

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The climate emergency

The Paris agreement[1] aims to limit the rise in average global temperature, setting the objective of containing the thermal increase by 2°C compared to pre-industrial levels, and aiming to increase efforts to stabilise the rise in temperature by 1.5°C.

The increase in temperature is determined by the accumulated emissions of greenhouse gases. Particularly important are the accumulated net concentrations of man-made CO2. The aim is not only to reduce emissions but also to achieve carbon neutrality, i.e. zero net emissions.

The mechanism established to reduce greenhouse emissions was the "nationally determined contributions"(NDCs), which are voluntary for each country. In its 2019 report, the Intergovernmental Panel on Climate Change (IPCC) states that the temperature reduction targets of the Paris agreement were unachievable with the national commitment levels. The temperature increase between 2006 and 2015 was already almost one degree and it is forecast that, if the rate of decarbonisation does not increase, there will be around a 3.2°C increase by the end of the century.[2]

The temperature increase caused by emissions from human activity will last for hundreds of years. CO2 stays in the atmosphere for centuries, and even longer in the oceans. In the long term, the current emissions trend will pose a dangerous challenge to future generations. Humanity will face more extreme climatic phenomena, rising temperatures, more heat waves, increased water stress, rising sea levels and the destruction of marine and terrestrial ecosystems. Future risks related to climate change depend on the pace of emissions, the peak temperature reached and the duration of the warming. For this reason, it is important to rapidly reduce emissions, which even if they fall, accumulate on top of the previous ones and take time to be absorbed by carbon sinks.

[1] The Paris Agreement was adopted within the framework of the United Nations Framework Convention on Climate Change. It was negotiated during the 21st Conference on Climate Change (COP 21) by the 195 member countries

[2] https://wedocs.unep.org/bitstream/handle/20.500.11822/30798/EGR19ESSP.pdf?sequence=17

https://www.ipcc.ch/site/assets/uploads/sites/2/2019/09/IPCC-Special-Report-1.5-SPM_es.pdf

"In line with the prolonged warming trend since pre-industrial times, the global average surface temperature observed in the decade 2006-2015 was 0.87°C higher (likely range 0.75°C to 0.99°C) than the average for the period 1850-1900.

According to the World Meteorological Organization's (WMO) Greenhouse gas (GHG) bulletin in 2019, levels of these heat-trapping gases in the atmosphere have again reached a record high. Since 1990, there has been a 43% increase in total radiative forcing[3], and an annual growth rate over the last decade of almost one percent.[4]

Carbon dioxide is an objective measure for determining air quality and its effects on climate.[5] When the planet had similar concentrations 3 to 5 million years ago, temperatures were 2-3 degrees higher and, most dangerously, sea levels were 10-20 metres higher than today.[6]

With current nationally determined contributions (NDCs) and current levels of ambition, global emissions are not expected to peak by 2030. WMO Secretary-General Petteri Taalas, on the occasion of the 2019 report, acknowledged that there are no indications that there will be a decrease in the concentration of greenhouse gases in the atmosphere in the next decade.[7]

In 2019, the United Nations Environment Programme published a document entitled "Lessons from a decade of emissions gap assessments".[8] The conclusions were truly devastating. It stated that the level of emissions projected for 2020 under a business-as-usual scenario –calculated in 2005 and based on the assumption that there would be no new climate policies– is substantially the same as that actually achieved. In other words, there has essentially been no real change in global emissions over the last decade. Emissions have continued at the same growth rate. The effects of climate

[3] Radiative forcing or climatic forcing is the difference between the insolation (sunlight) absorbed by the Earth and the energy radiated back into space. Positive radiative forcing means that the Earth receives more energy from sunlight than it radiates into space. This net energy gain will cause warming.

[4] https://library.wmo.int/doc_num.php?explnum_id=10100

[5] https://www.pce-iberica.es/medidor-detalles-tecnicos/definicion-calidad-aire-y-co2.htm

The maximum recommended value for interiors is 1,000 parts per million (ppm) and the limit for offices is 1,500 ppm. In April 2020, the average concentration of CO2 in the atmosphere was 416.21 ppm. Carbon dioxide is only harmful at concentrations of 5% by volume (50,000 ppm), but at much lower concentrations (800 to 2,000 ppm) various problems can occur, such as headache, fatigue, loss of concentration and poor performance.

[6] https://public.wmo.int/es/media/comunicados-de-prensa/la-concentraci%C3%B3n-de-gases-de-efecto-invernadero-en-la-atm%C3%B3sfera-alcanza

[7] https://www.nationalgeographic.com.es/ciencia/concentracion-gases-efecto-invernadero-atmosfera-alcanza-records-sin-precedentes_15000

[8] "Lessons from a decade of emissions gap assessments"

policies in some countries have been insufficient to offset the impact of economic growth and population growth.

In 2020, it is estimated that the economic effects of COVID 19 will cause a reduction in emissions of 8%, with smaller falls over the next two years. The central scenario predicts a recovery in economic activity that would return to pre-pandemic emission levels in 2027. After 2027, the economic transition is expected to allow for a 0.7% year-on-year decline until 2050. In this scenario, the world would move along a path that would lead to a global warming of 3.3 degrees by 2100. Reversing the emissions gap requires reducing emissions 10 times faster, to 6% year-on-year by mid-century. The 1.5 degree target would require a greater reduction effort of 10% per annum over the whole period.[9] Reversing the trend will require more drastic reductions achieved in less time.

Opportunities for energy transition in a post-pandemic scenario

At the UN Climate Action Summit held on 23 September in New York, the President of Chile, Sebastián Piñera, launched the "Climate Ambition Alliance" initiative. A total of 65 countries committed to achieving zero net carbon emissions by 2050. It was then estimated that the economic transition to a sustainable, low-carbon growth model could generate a turnover of $26 billion by 2030.[10]

In December at the climate summit (COP25) in Madrid, the number of countries committed to zero net carbon emissions rose to 73, including Spain.[11] In 2020, the list continued to grow to 120 states, with 1,100 companies, 452 cities, 22 regions, 549 universities and 45 of the world's largest investors. The so-called "Race to Zero" incorporates state and non-state actors who now cover just over half of the world's GDP, a quarter of global CO2 emissions and over 2.6 billion people.[12]

[9] https://www.ilo.org/newyork/news/WCMS_719977/lang--es/index.htm

[10] https://unfccc.int/es/news/la-cumbre-de-accion-climatica-logro-grandes-avances-y-chile-ejercio-un-claro-liderazgo

[11] https://www.europapress.es/epagro/noticia-mas-73-paises-firman-intencion-comprometer-ambicion-2020-ninguno-mas-contaminantes-20191211181525.html

[12] https://unfccc.int/climate-action/race-to-zero-campaign

Alok Sharma, UK Secretary of State for Business, Energy and Industrial Strategy and President of COP26, to be held in Glasgow, highlighted the great opportunity that a reconversion of the productive system capable of promoting a clean and sustainable recovery can represent for post-pandemic economic reconstruction.[13] In the same vein, UN Special Envoy for Climate and Finance and advisor to the UK Government at COP26, Mark Carney, said the transition to a carbon-neutral economy will create "the biggest business opportunity of our time".[14]

The International Labour Organization estimates that economic transition, associated with measures aimed at a new form of production compatible with environmental protection, will generate net employment gains, creating some 24 million jobs by 2030.[15]

The Inter-American Development Bank (IDB) and the International Labour Organization (ILO) estimate that the transition to a zero-carbon economy could create 15 million net new jobs in Latin America by 2030.[16]

A new type of worker is beginning to occupy an increasingly large space, known as green-collar workers. The green training necessary for these workers will be based on environmental specialisation within each of the different sectors, meaning that the new opportunities will be of a cross-cutting nature.

According to the International Renewable Energy Agency (IRENA), renewable energies created more than half a million new jobs worldwide in 2017, with a growth rate of just over 5% per year. It is estimated that more than 11 million people are currently employed in the renewable energy sector.[17] IRENA announces that the best may be yet to come and, by 2050, it would employ 42 million more workers worldwide, in addition to the additional jobs related to energy efficiency, electric mobility and grid modernisation. Total employment in the energy sector could thus reach 100 million by 2050.[18] Of course, the different scenarios envisaged by the studies carried out by the various

[13] https://cop25.mma.gob.cl/tag/alianza-de-ambicion-climatica/

[14] https://cop25.mma.gob.cl/ciudades-regiones-y-empresas-aumentan-la-ambicion-sobre-el-cambio-climatico-para-ofrecer-economias-mas-saludables-a-raiz-de-la-pandemia/

[15] https://www.ilo.org/newyork/news/WCMS_719977/lang--es/index.htm

[16] https://energialimpiaparatodos.com/2020/08/05/15-millones-de-empleos-hacia-economia-de-cero-emisiones-netas-en-2030-destaca-bid-y-oit/

[17] https://www.iberdrola.com/medio-ambiente/que-es-empleo-verde

[18] https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Apr/IRENA_Global_Renewables_Outlook_2020.pdf

organisations differ according to the rate of change envisaged in decarbonisation. However, facing the threat posed by global warming is also a great opportunity for economic transformation, business, efficiency improvements, increased employment and reduced energy prices.

It is important to note that renewable energies are more labour-intensive than the increasingly automated fossil fuel sector. This factor would lead to greater overall job creation with the energy transition.[19] However, oil-producing countries such as Mexico, Ecuador and Venezuela will face difficult decisions during the transition period.

According to the IRENA, advancing the energy transformation to achieve the Sustainable Development Goals and the objectives of the Paris agreements would require doubling global renewable energy production by 2030, and also doubling investment in this sector, which requires a total investment of approximately 10 billion dollars over the next decade. By 2050, it is estimated that there will be a 17-fold increase in solar photovoltaic capacity worldwide and a six-fold increase in wind power capacity. These data position us in front of a business scenario that must not be ignored. Especially when, as in the case of Latin America, the potential for generating both clean energies is extremely high.

An additional factor of great importance is the price of renewable energies. In 2018 the Levelized Cost of Energy (LCOE)[20] of new photovoltaic plants was less than a quarter of that of those built in 2009. In this same period the LCOE of wind power plants has fallen by almost half. In 2050, it is estimated that the Levelized Costs of Energy will fall even further, representing only 5% for photovoltaic plants and 24% for wind power plants, compared to 2009 prices.[21]

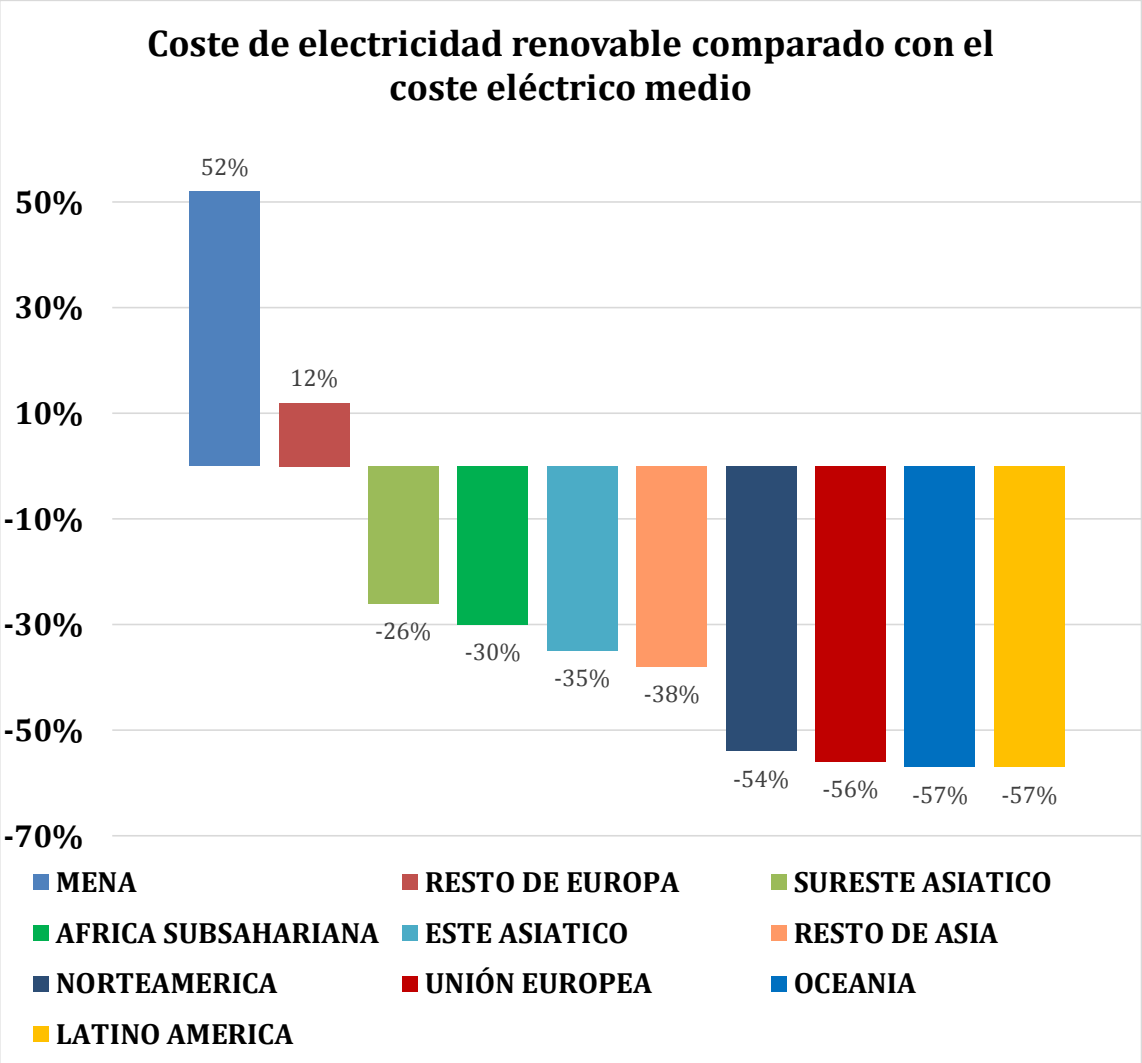
The comparative prices of electricity from renewable sources in relation to the average price of electricity in 2019 show that, for most regions, the relationship is very favourable. The cost of renewables is only higher in non-EU European countries and in

[19] in 2016 less than 10% of primary energy in the United States was generated by renewable energy sources, and instead these accounted for 36% of employees in the electricity and fuel generation sector.

[20] The LCOE is the value of the current total cost of building and operating a power generation facility over its lifetime. It thus measures the total costs that such a facility will have throughout its life and divides them by the energy production that it will also carry out during all its years of operation. It is normally expressed in euros per megawatt hour.

[21] https://about.bnef.com/blog/batteries-boom-enables-world-get-half-electricity-wind-solar-2050/

the Middle East and North Africa. In the case of Ibero-America we find that clean energy is much cheaper than that produced by thermal power stations, so much so that it represents a saving for the region that is greater than in the rest of the world. The expected economic returns for each dollar invested in energy transformation range from 3 to 8 dollars in the region. The challenge is financing the necessary investments.



Source: Global Renewables Outlook 2020 IRENA. Prepared internally

Note: Renewable energy costs according to IRENA values, 2019; GlobalPetrolPrices average prices, 2019.

On the other hand, oil demand will peak between 2035 and 2045. We are faced with an unusual situation, a reduction in demand and an excess of supply. This will result in significant tensions in the oil markets and a continued decline in investment, especially in new ventures. Oil producing and exporting countries will see their tax revenues reduced and their balance of payments affected. Their deficit will increase and their public debt will skyrocket, as their currencies depreciate and per capita income in purchasing power parity falls. It will be stormy times for these societies. "The emergence of a power vacuum in the current petrostates could potentially be one of the greatest geopolitical risks of the energy transition."[22]

Meanwhile, gas consumption will continue to grow, being the only fossil fuel that will exceed current demand. The competitive price of gas may reduce the speed of energy transition in some countries such as the United States and Mexico.[23]

Against this backdrop, within the framework of COP 25, ten Latin American countries signed an agreement to reach an average of 70% of installed capacity in the renewable energy matrix by 2030, which is equivalent to 312 GW of installed renewable energy capacity. The agreement sets the most ambitious regional targets for renewable energy development in the world at this time. So far it has been signed by Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Haiti, Honduras, Paraguay and Peru, but it is open to other countries.[24]

The strategic development possibilities and advantages offered to Latin America by the energy and industrial transition are extraordinarily favourable. The example of Chile is illustrative; it has the highest solar radiation in the world, the greatest wind potential in the world, one of the largest reserves of lithium in the world, a mineral that is fundamental for the construction of batteries for electric cars, a mountain range with nearly 3,000 volcanoes and a coastline of more than 6,000 kilometres, which could be the basis for an immense potential for the development of geothermal and marine energy. Looking at Latin America as a whole, we discover a continent that is especially gifted and blessed, once again, by its abundance of resources.

[22] http://geopoliticsofrenewables.org/assets/geopolitics/Reports/wp-content/uploads/2019/01/Global_commission_renewable_energy_2019.pdf

[23] https://about.bnef.com/new-energy-outlook/

[24] https://www.pv-magazine-latam.com/2019/12/11/10-paises-de-america-latina-y-el-caribe-anuncian-la-meta-de-70-de-energias-renovables-a-2030/

Latin America, a particularly blessed and cursed continent

Focusing only on photovoltaic electricity production, we found out that, in 2017, the Italian company ENEL won tenders to build two plants in Mexico capable of producing electricity at the lowest price in the world at the time.[25] The cheapest electricity would be generated in the Mexican state of Coahuila, at 17.7 dollars per MWh.[26] Within the Mexican wholesale market, the average price of electricity was close to 60 dollars per MWh. However, the impact on the electricity bill of the significant cost reduction is not noticed because there is still a very low level of renewable energy production.[27]

Mexico is undoubtedly one of the most attractive countries for new renewable energy projects, especially solar. Its commercial relationship with the United States and Canada allows it to offer prices in dollars, favouring stability. But there are no definitive results. Mexico, Chile, the United Arab Emirates and Saudi Arabia continuously compete in their auctions to award contracts to companies capable of generating electricity at the lowest price. In all cases, the energy comes from renewable energies.[28] The prices of solar energy in Latin America are so competitive that they have displaced all other alternatives.

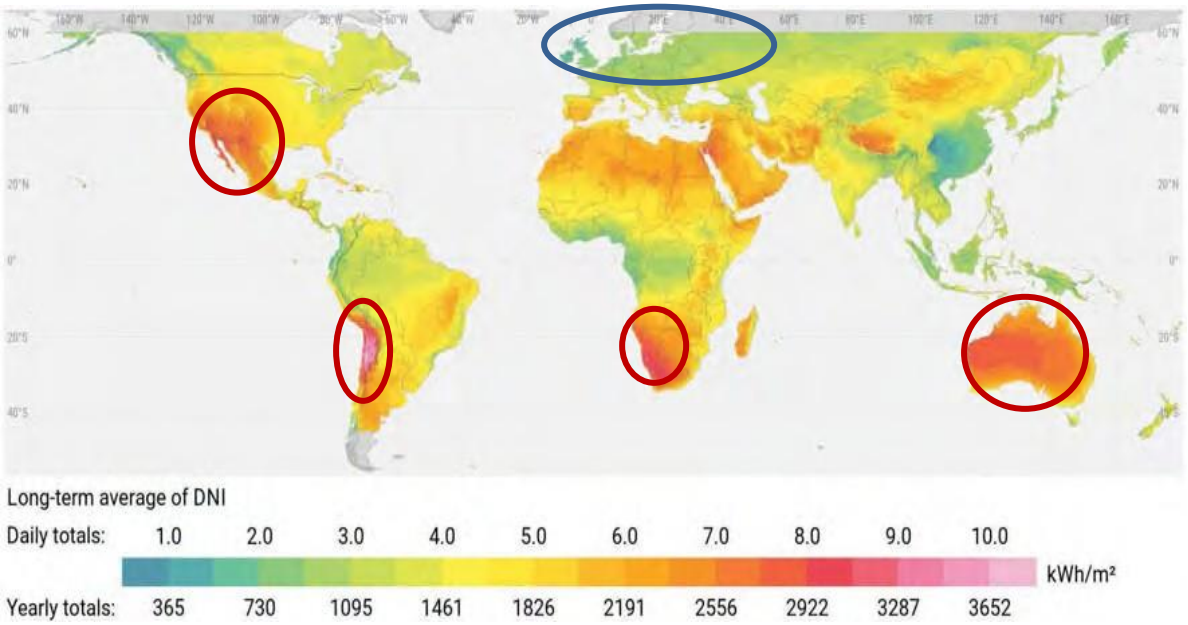
[25] In May 2020, the 2-gigawatt solar photovoltaic project in the Al Dhafra region of Abu Dhabi in the United Arab Emirates (UAE) received a record bid of 12.46 euros/MWh, far exceeding the previous price set by Total and Marubeni when bidding for their 800 MW project in Qatar at a price of 14.03 euros/MWh.

[26] In China, the largest photovoltaic market, the reference price was 39 euros/MWh.

[27] https://elpais.com/economia/2017/12/07/actualidad/1512602315_489392.html
https://nacionelectrica.com/mexico-impone-record-energia-solar-mas-barata-del-planeta-177-%C2%A2-kwh/

[28] https://www.renovablesverdes.com/enel-generara-la-energia-mas-barata-del-mundo-en-mexico/

DIRECT NORMAL IRRADIATION (DNI): DAILY AND ANNUAL AVERAGE IN KWH/M²

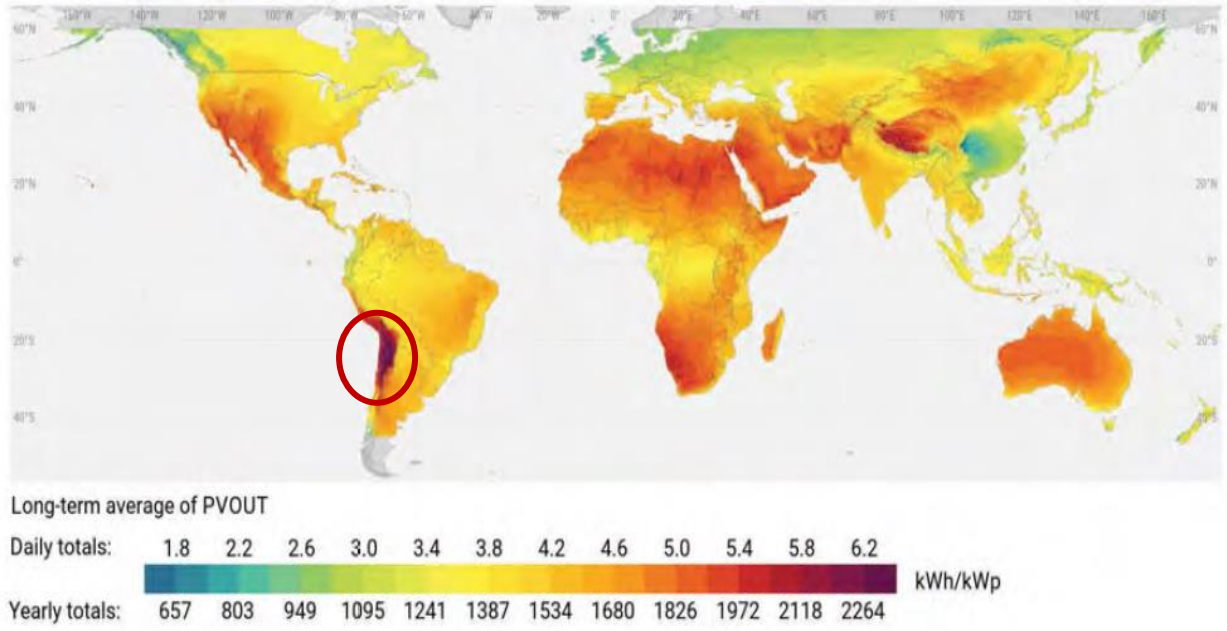


Source: http://documents1.worldbank.org/curated/en/466331592817725242/pdf/Global-Photovoltaic-Power-Potential-by-Country.pdf

The World Bank report, "Solar Photovoltaic Power Potential by Country" is a study that provides a comprehensive and harmonised assessment of the photovoltaic potential at the national level. In the graph, we see the general theoretical solar potential, called direct normal irradiation (DNI), measured in KW hour per square metre of solar panel. The map shows four areas highlighted in red due to their high potential for photovoltaic generation, two of which are in Latin America. The one with the highest values covers the north of Chile, the south of Peru and the west of Bolivia, the maximum value in some areas reaching 10 KW hour per square metre. Meanwhile, the whole of Europe north of the Rhine and the Danube has four times less potential.

The map below is even more interesting because it evaluates the efficiency of photovoltaic plants by comparing production capacity with installed capacity, i.e. the KWh delivered to the grid per day with the installed capacity of the plant. The most efficient region of the world is the one indicated with the red circle. Chile, Peru and Bolivia are the countries where it would be most profitable to produce electricity with photovoltaic solar panels. The best photovoltaic Levelized Costs of Energy in the world are therefore in South America, in the Andes region, with absolute values that are 15 to 20% better than other regions with which it competes, such as the Arabian peninsula and North Africa. The clear advantage is the result of a unique combination of factors that cannot be found anywhere else in the world. The cleanliness of the air, the clarity of the sky, the low air temperature and the altitude.[29]

FIGURE 3.4: PRACTICAL SOLAR PV POWER POTENTIAL: LONG-TERM YEARLY AVERAGE OF DAILY/YEARLY SUMMARIES (LEVEL 0)



Source: Authors.

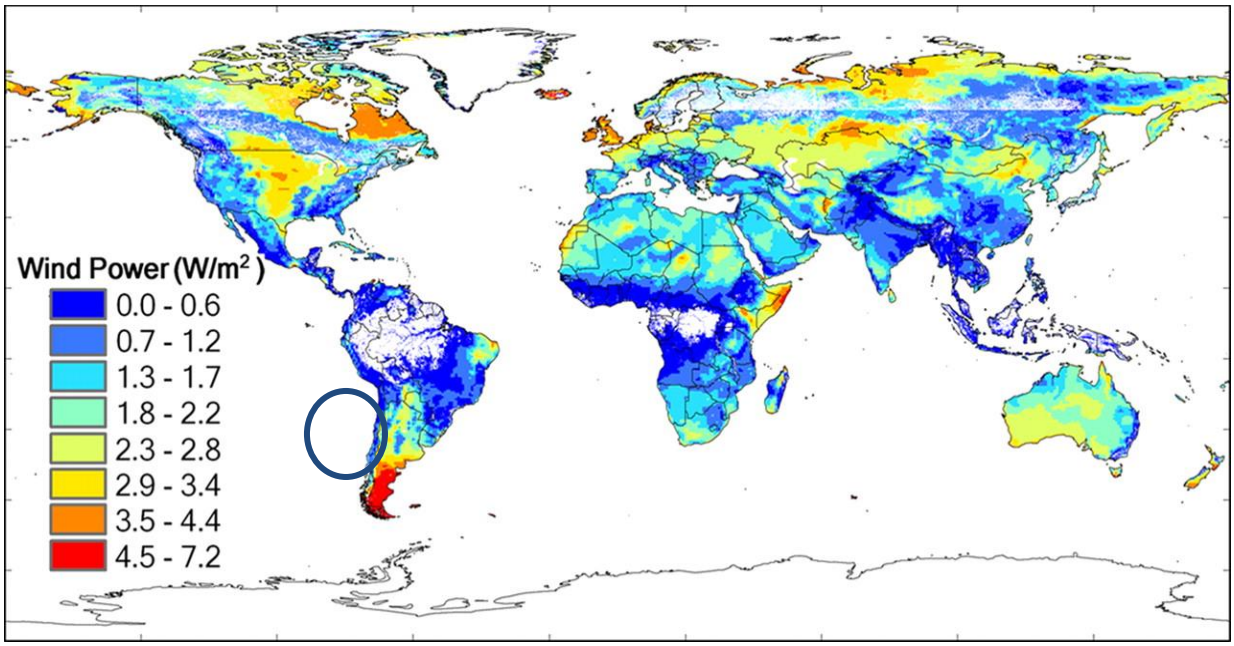
Source: http://documents1.worldbank.org/curated/en/466331592817725242/pdf/Global-Photovoltaic-Power-Potential-by-Country.pdf

[29] http://documents1.worldbank.org/curated/en/466331592817725242/pdf/Global-Photovoltaic-Power-Potential-by-Country.pdf

In contrast, the thirty least efficient countries include 27 in Northern Europe. On our continent, Cyprus, Malta and Spain stand out as the most suitable for installing photovoltaic plants, with the KWh/KWp capacity of several countries such as Ireland, the United Kingdom and Estonia doubling.

In the case of wind energy, we find that the area where the highest production yield can be obtained is the southern cone of America, in Argentina and southern Chile. The map uses wind power density (WPD), which is measured in watts per square metre, to identify the different wind zones in the world.[30] The data reflected on the map show that the power density of southern Chile and much of Argentina may be five times greater than that of most of the European continent.

Average annual onshore wind power density distribution (W/m2)



Source: https://www.pnas.org/content/106/27/10933

[30] The power density depends on the cube speed. Meaning that if the speed increases by 2 units, the power density increases by 8 units. The power density depends linearly on the density of the air, so cold air has a higher power density than hot air. Likewise, at the same temperature, a place located at an elevation close to sea level will have a higher power density than one located at a higher altitude due to the fact that air density decreases with altitude

Surprisingly, if we analyse the index of countries ranked by their capacity to attract investment in renewable energies, we find that regions with low photovoltaic potential are among the most interesting for project financing. Looking at the data in the table below, we see how the Ibero-American countries have been losing positions over time. In 2016, three countries in the region were among the top 10 in the world, now there are none.

INDEX OF COUNTRIES BY ORDER OF ATTRACTION FOR INVESTMENTS IN RENEWABLE ENERGIES						
	2020 NOV	2020 MAY	2019 NOV	2019 MAY	2018	2016
UNITED STATES	1	1	2	2	2	1
PEOPLE'S REP. OF CHINA	2	2	1	1	1	2
AUSTRALIA	3	4	5	6	5	10
INDIA	4	7	3	4	4	3
UK	5	6	7	8	7	13
GERMANY	6	5	6	6	3	5
FRANCE	7	3	4	3	6	8
SPAIN	10	11	15	16	24	28
CHILE	11	13	NO	NO	11	4
BRAZIL	15	16	19	16	18	6
ARGENTINA	19	14	11	9	13	18
MEXICO	33	25	24	19	12	7
PERU	NO	NO	NO	NO	31	24

Source: RECAI, Renewable Energy Country attractiveness index. Prepared internally

The United Kingdom and the Netherlands with a photovoltaic production per installed capacity four or five times lower than Chile, Mexico, Peru, Argentina or Brazil are, however, more attractive countries for investors in renewable energies in general, and even in the case of solar energy. The Ibero-American continent is missing an extraordinary opportunity to transform its energy matrix, which would entail significant direct foreign investment, falls in electricity prices, improved competitiveness to attract electricity-intensive industries, technological development in cutting-edge sectors of new high-performance industries and job creation.

However, the advantages of higher yields in renewable energy production do not outweigh the greater risks in the region. Some of the most important are legal uncertainty, the difficult post-pandemic economic recovery, the reduction in the supply of new plant construction tenders, the insufficient development of electricity transmission and distribution networks, the high inflation in some countries, the fall in demand and supply, the exchange rate risk and the resistance of some social and political sectors to structural change.

Two illustrative examples

Mexico was, with President Peña Prieto, the last OECD country to deregulate the electricity market, allowing private companies to enter the sector and favouring the development of renewable energies. Renewable energies already produce more than 16% of Mexico's electricity.

President Andrés Manuel López Obrador has always opposed the entry of private companies into the electricity and oil markets. López Obrador and the director general of the Federal Electricity Commission (CFE), Manuel Barlett, longed for the times when the CFE produced all the country's electricity and Pemex exploited all the deposits. AMLO and Bartlett are convinced that the energy reform of 2013 was an attempt to end the CFE and the state oil company Pemex, in order to favour the interests of private companies.

AMLO's new energy policy aims to recover the centrality of state-owned companies in the Mexican economy. The risk of the reorientation adopted is very high and the reversal of the liberalising model is associated with a certain danger of inefficiency, increased greenhouse gas emissions, paralysis of investments in new developments, the impossibility of lowering electricity prices, and the postponed bankruptcy of Pemex.

Based on the reduction in demand caused by COVID, the National Energy Control Centre (CENACE), the electricity system's regulatory body, established in April 2020 the suspension of pre-testing of wind and solar power plants that are completed or about to be completed. The decision affects 44 wind and solar projects that accumulate investments of more than 6 billion dollars and are suddenly stopped without being able to go into operation. CENACE accuses renewable energy plants of threatening the safety of the electricity grid through their intermittent production.[31] CENACE's arguments are not very consistent.

In addition, the national electricity transmission grid is owned by the state-owned CFE, which can set the conditions for entry into the system, taxing renewable energies due to their intermittent nature, while favouring CFE because it has base electricity, as its plants are fundamentally thermal and produce continuously.

Furthermore, on 16 May the Secretariat of Energy (Sener) published new provisions to give the State more power to decide who can enter the system, and with how much power. In other words, who can generate electricity and what amount. With the new policy of reliability, safety, continuity and quality in the national electricity system, Sener intends to limit the entry into operation of solar and wind energy plants and the rest of the private plants, giving preference to CFE, which during the pandemic kept some of its plants without producing due to the fall in demand.[32]

[31] https://www.forbes.com.mx/politica-el-gobierno-amlo-y-sus-medidas-para-favorecer-a-la-cfe-industia-electrica-mexico/

[32] https://www.forbes.com.mx/economia-politica-amlo-electricidad-riesgo-inversiones/

The attempt to refloat Petróleos Mexicanos (PEMEX) requires continuing to burn oil in the old and inefficient CFE power plants. PEMEX is the most indebted oil company in the world.[33] In June 2019, the credit rating agency Fitch Ratings downgraded PEMEX's debt issues to junk bond status.[34]

In less than two years, Mexico has lost its leading position in renewable energies to boost consumption of fossil fuels. The political justification is, on the one hand, to regain state control of electricity production and, on the other hand, to rescue and restore the dominant position of state-owned companies.[35]

The coordinated decisions of CENACE, Sener and CFE represent a frontal attack on the legal security of investments in Mexico, which endanger a total of 68 billion dollars of investments made or committed by mainly international private companies.[36]

Changing the scenario, Chile's National Energy Commission had not held an auction for the construction of new power plants since 2017. The fall in projected energy demand, estimated by the CNE, delays the auction announced for the end of 2019. Social unrest and the COVID pandemic forced NEC to recalculate the future needs of the system downwards. Finally, in November 2020, the call for tenders was launched. The new power plants are set to come into operation in 2026. The change in the auction calendar alters the investment plans of companies that cannot calculate their business regime with guarantees.

The reduction in total auctioned power to half of that planned for 2019 is also particularly noteworthy, especially given that with the current electricity matrix fossil fuels still account for more than half of the total. The conclusion, from the supply side, is that the Chilean market –and others too– will not move as fast as the European market in renewing the power plant fleet towards renewable energies. The contracting of new plants, by reducing the number of those tendered, will mean greater competition between the companies participating in the auction, reducing the profit margin.

[33] https://www.infobae.com/america/mexico/2020/02/11/pemex-bonos-de-la-petrolera-mas-endeudada-del-mundo-alcanzan-record/

[34] https://www.europapress.es/economia/noticia-fitch-degrada-bono-basura-rating-pemex-20190607091801.html

[35] https://www.forbes.com.mx/negocios-la-4t-y-la-ip-se-confrontan-por-las-energias-renovables/

[36] https://www.forbes.com.mx/economia-politica-amlo-electricidad-riesgo-inversiones/

Conclusion

By analysing the situation in the region, we can learn important lessons. The first is that strong government policy, with clear messages and incentives for markets, investors and operators, is essential to attract the capital needed to finance the energy and economic transition.

The second lesson is that regulatory changes, social protests, the reduction of planned bids, mismatches in auction calendars, currency instability, the governance deficit, in short, the uncertainties added to the technical risk calculations discourage investors, despite the great business opportunities with high returns.

The third lesson is that oil-producing and exporting countries, where a significant part of their public revenues depend on the sale of crude oil abroad and where fuels are subsidised, will suffer fiscal and social tensions. In Latin America, many major revolts have been sparked off by governments' attempts to eliminate or reduce subsidies on fuel, electricity or transport.

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