

IPC-MERCATOR POLICY BRIEF

REINVIGORATING TURKEY'S ENERGY LEADERSHIP – TURKEY AS A SUSTAINABLE ENERGY LEADER AMONG EMERGING ECONOMIES

Jörn Richert*

Executive Summary

The global fight against climate change as well as efforts to guarantee energy security both call for the sustainable transformation of the world's energy systems. Turkey has ample potential to become a leader in the pursuit of this goal. It comprises significant energy saving and formidable renewable energy potentials. Moreover, in Turkey's quickly growing economy, energy investment decisions are taken today that will determine the future course of Turkey's energy systems. This situation presents a unique opportunity to develop a sustainable and future-proof energy profile.

To become a sustainable energy leader among emerging economies, Turkey would have to implement a progressive and coherent sustainable energy policy. Although solid energy policy architecture is in place, sustainable energy targets are weak, government support is limited, and bureaucratic hurdles for energy investment still frustrate potential investors. Most importantly, many top policymakers do not seem to be ready to play a productive role in designing a forward-looking, sustainable energy policy for Turkey. Particularly, the country's "dash for coal" threatens to destroy Turkey's potential to become an energy leader and to provoke substantial difficulties for Turkey in upcoming climate negotiations. The policy brief concludes by outlining policy recommendations that would help overcoming these limitations and making Turkey a sustainable energy leader.

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The interpretations and conclusions made in this article belong solely to the author and do not reflect IPC's official position.

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Introduction

Leadership can be defined as a situation or context in which one actor leads a group of followers toward the accomplishment of a common objective.¹ This definition has several implications. First, leadership always occurs in a concrete, circumscribed context. Second, since the objective that actors pursue in this context is shared, leadership is not purely egoistic. Third, followers are important. Leadership cannot be understood by focusing on the alleged leader alone. Fourth, as in all relations between actors, power plays an important role. Leadership is based on smart power.² It cannot be based on hard power resources such as military capabilities or money alone. It also depends on attraction and, thus, soft power.

Becoming a leader - a regional energy leader in the Southern Corridor more precisely - has served as the main strategic vision of the Turkish Energy Ministry.³ This leadership ambition seems to be supported by recent energy political developments. The Trans Anatolian Pipeline (TANAP) and the Trans Adriatic Pipeline (TAP) could soon bring 6 billion cubic meters of gas per year (bcm/y) to Turkey and 10 bcm/y to Europe. Moreover, talks have begun about a new Russian-Turkish pipeline, dubbed Turkstream by some, that could transport more than 60 bcm/y of gas from Russia to Turkey and beyond in the future.⁴

Turkey has thus proven to be an important player in regional energy politics. However, as the above leadership definition shows, leadership demands more than that. It demands a shared objective, the use of smart power, as well as followers. As a previous analysis of Turkish energy leadership ambitions has shown, leadership in the Southern Corridor remains out of reach for Turkey:⁵ With actual gas flowing from Azerbaijan to Europe in the near future, Turkey will wield the power to

actually manipulate gas flows. Consumers, as well as producers, will watch closely how Turkey uses this “transit power.” The country will have two options. First, Turkey might choose to use its new power for political leverage. However, instead of bringing about a common objective and mustering followers, both essential for leadership, this strategy would create mistrust among its neighbors and effectively result in the *securitization* of energy in the Southern Corridor.

The second option is to *economize* energy: this means taking energy out of the realm of politics and treating it as an exclusively economic matter. In the future, this strategy could make Turkey an energy hub. Just as in the case of securitization, however, economization will not result in leadership, because removing politics from energy governance means to remove power.⁶ Leadership is a relation of power, and thus, economization leaves little room for leadership.

Is energy leadership out of reach for Turkey then? To answer this question, so the previous leadership analysis concludes, it is necessary to reconsider the Turkish energy vision on a very fundamental level: It is necessary to find a new common energy political objective, to muster new followers, and to reevaluate the geographic scope of Turkey’s ambition. This policy brief offers such a reconsideration.

It proposes a strategic energy vision for Turkey that might make the country an energy leader proper: A sustainable energy leader among emerging economies. It develops this vision along the lines of the abovementioned leadership definition. The next section focuses on the context of leadership by arguing that the relevant geographic scope for Turkish energy leadership is global. The brief then discusses the logic of Turkish energy leadership. Three components are important here: Turkey’s

specific economic situation, the potential followers of Turkey as a sustainable energy leader, and finally the different power resources that are necessary for becoming a leader. Subsequently, Turkey's actual potential to become a sustainable energy leader is analyzed by discussing the country's hard and soft power resources that might add up to a smart leadership strategy. The policy brief concludes by outlining policy recommendations that would help Turkey to become such a leader.

The Global Leadership Context

Turkey's energy leadership claims have so far been staged in the context of the Southern Corridor. Conceptually speaking, such an energy leadership context can be understood as an energy governance complex, defined by durable, geographically coherent energy interdependencies and the political patterns that form around them.⁷

This definition implies that an energy leadership context is held together by interdependence. The Southern Corridor, for example, is based on the interdependence resulting from the planning and operation of oil and gas pipelines. While this interdependence is important, Turkey is equally immersed in a global web of interdependence that is giving rise to a global energy governance complex and thus opens up opportunities for global energy leadership.

Global Interdependence - Energy Trade and Climate Change

Global energy interdependence is generated by global energy trade and physical flows of oil and gas. It furthermore extends to globally connected energy pricing. If one actor purchases more oil on

the global market, for example, the oil price will rise for all actors operating in the same market. Climate change and policy further increase global interdependence. The fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) has once again shown that climate change is real, largely human induced, and ongoing. Fossil fuel combustion is responsible for roughly two-thirds of past and future global carbon dioxide emissions.⁸ A country's unsustainable energy policies therefore affect other actors by changing the climate conditions for those actors. National and international climate policies create interdependence between actors by altering parameters such as global fossil fuel demand and thus prices, as well as the costs of renewable energy products like solar panels.

Turkey as Part of the Global Energy Governance Complex

Global energy interdependence is the foundation of the global energy governance complex. Turkey is clearly part of this complex. Since Turkey lacks domestic resources, it is almost entirely dependent on oil and gas imports. More than 90% of oil and almost 100% of natural gas is imported.⁹ Climate change, too, is already being felt in Turkey and will intensify in the future.¹⁰ Among other developments climatic zones will move northwards, and the risk of droughts and desertification will increase. Physical changes will have negative impacts on a variety of socio-economic sectors such as tourism, agriculture, forestry, infrastructure, and public health. Major impacts are also identified in the energy sector. Transmission and transporting infrastructure, as well as large power stations, might be negatively affected by extreme weather events, sea level rise, and reduced cooling capacities in a warmer climate. Moreover, hydropower generation

will suffer from reduced water runoff. The potential for solar and, particularly, wind power, on the other hand, may increase as a consequence of climate change.

Global Objective - Sustainable Energy Transition

Climate change and resource scarcity constitute twin challenges for Turkey and the rest of the world. This challenge suggests a clear common objective in the global energy governance complex: transforming global energy systems in a sustainable way. In the climate context, this objective is part of the international call to limit global warming to 2°C. If current ways of producing and consuming energy should persist, this would result in a warming of at least 3.6°C.¹¹ The 2°C objective thus translates into the de-carbonization of the world's energy use.

Matters of energy resources trade and pricing have often been associated with inter-state conflict much more than with cooperation or even common objectives. However, this is not to say that cooperation is unlikely or even impossible.¹² A general objective of such cooperation should be to ensure a sustainable balance between global demand and supply, as well as the stability of energy prices. As the IEA and others have repeatedly highlighted, particularly in the long run, a transformation of energy systems based on renewable energies and energy efficiency is key to this development.¹³

The Logic of Sustainable Energy Leadership Among Emerging Economies

While Turkey is likely to be negatively affected by climate change and resource scarcity, the objective of sustainable energy transformation holds substantial

leadership opportunities. This section elaborates the logic of Turkey becoming a sustainable energy leader. It discusses Turkey's specific position as a leader among emerging economies and argues that three major groups of actors might follow Turkey as a sustainable energy leader. Finally, it turns to the importance of soft and hard power in becoming such a leader - these different forms of power will be essential to the subsequent analysis of Turkey's actual performance.

Leadership Among Emerging Economies - Common but Differentiated Responsibilities

In discussing the logic of sustainable energy leadership, it is important to recognize the principle of common but differentiated responsibilities. Established in global climate negotiations in the early 1990s,¹⁴ this principle holds that industrialized countries have the major responsibility of pursuing rigorous sustainability policies.

The process of ongoing climate negotiations has also made clear, however, that other states need to contribute to a global solution, too.¹⁵ This is particularly true for the so-called emerging economies, a group of countries that has demonstrated substantial growth in CO₂ emissions (see Figure 1, Annex). These countries face comparable structural challenges in terms of high economic growth, societal transformation, and a growing need for energy infrastructure and services. Emerging economies are particularly important for the global energy transition, because the profound transformation they experience calls for substantial investments in energy infrastructure. Investment decisions made today will lock in the structure of their growing energy systems for the coming decades.

Turkey shares many of the structural characteristics of emerging economies (see Table 1, Annex). In imagining Turkey as a sustainable energy leader,

this needs to be taken into account; Turkey would have to be regarded and respected as a sustainable energy leader *among emerging economies*. It would thereby fill a position in global energy governance that is different from, but not subordinated to the leadership ambitions of industrialized countries. Indeed, as is shown next, being a leader among emerging economies has important implications for how other actors can relate to Turkey's leadership ambitions. Also the hard and soft power resources that Turkey must utilize in order to become a sustainable energy leader, discussed thereafter, are affected by Turkey's specific position of being a leader among emerging economies.

Potential Followers

Since leaders require followers, it needs to be asked: who would follow Turkey? Three groups of followers are particularly noteworthy.

The first group is that of industrialized countries. These countries would most likely support Turkey's lead. In trying to convince emerging economies to commit themselves to sustainable energy transformation, it would be of great interest for them to work with Turkey. Particularly, the EU, itself a long-time leader in global climate negotiations,¹⁶ can be expected to follow and support Turkey as a sustainable forerunner among emerging economies.

Second, there is a great chance that Turkey's leadership would be followed by other emerging economies such as India and South Africa. As a recent study shows, these countries are sympathetic to the idea of energy transition.¹⁷ It also shows that they see the idea fit for industrialized countries only. However, in the medium-term, emerging economies will increasingly confront the twin challenges of energy and climate change and are thus likely to put greater emphasis on sustainable energy strategies, too. This is where Turkey could

step in as a leading example demonstrating the viability of sustainable energy policies for an emerging economy.

A third and special case is that of China. As the most prominent among emerging economies, China is already investing heavily into sustainable energy. Indeed, the country has become the world's largest renewable energy producer.¹⁸ This development makes China one of the forerunners in energy transition. If Turkey opted for sustainable energy leadership among emerging economies, this would make Turkey and China natural and strong energy political partners.

Hard and Soft Power in Sustainable Energy Leadership

Scholars of international politics have long argued that power does not easily flow from one policy field to another.¹⁹ Power is context-dependent. In the context of a global energy governance complex, therefore, specific kinds of power resources are relevant. The power of a sustainable energy leader within this context resides in the capacity to realize the objective of sustainable energy transformation. Importantly, sustainable energy leadership needs to be understood as leadership by example. Only if a country is pursuing a proactive domestic energy transition can it credibly lead other relevant actors to do the same. As mentioned in the initial paragraph of this policy brief, furthermore, leadership demands smart power. This means, a potential leader must combine hard and soft power elements to form a successful leadership strategy.

Hard power comprises, in general terms, the material and financial assets that a country might employ to pursue its own or a shared objective. In the case of sustainable energy leadership, hard power is made up of the material prerequisites that make sustainable energy transition possible. Energy savings and renewable energy potentials are

important in this regard. Hard power, furthermore, comprises the financial means necessary for respective investments. As shall be seen in the next section, the position of an emerging economy can also be interpreted as a hard power asset.

Soft power, on the other hand, is the capacity to achieve goals and convince followers by means of attraction. It stems from an actor's values and policies, if these are attractive and legitimate in the face of a leadership objective.²⁰ To be legitimate, a sustainable energy leader has to show serious commitment to the value of sustainability. It also has to employ effective policies that are in line with this value. Attractiveness, in turn, is important to convince other political actors and investors to support and follow one's own cause.

Turkey's Powers to Lead - Substantial Potential and Policy Challenges

While the above section discusses how sustainable energy leadership works in principle, this section shows Turkey's potential to become a sustainable energy leader in practice by analyzing its hard and soft power capabilities.

Hard Power I - Turkey's Specific Position as an Emerging Economy

Emerging economies are making policy and investment decisions today that result in hard facts - concrete energy systems that is - locking in either sustainable or unsustainable energy futures. For Turkey this is an important bargaining chip because actors such as the EU, which aspires to build a sustainable energy future on a global scale, need Turkey to opt for sustainability.

A position among emerging economies furthermore implies that other actors would not expect Turkey to be a sustainable energy

economy right away. A major part of its future energy system has not been built yet. Making the right political and economic decisions regarding the energy system's future components is, therefore, just as important as its current shape.

As a consequence, the country's power is based on its willingness and potential to become a sustainable energy economy in the future. An analogy of the development in the Southern Corridor helps to make this clear. Turkey's influence in the Southern Corridor initially did not stem from an existing strong position in energy trade. Until 2005, there was no major oil pipeline crossing Turkey, and until today there has been no such pipeline in operation for natural gas. Turkey has been important for pipeline politics in the Southern Corridor nonetheless, because it has had the potential to become a major transit country or energy hub. The same logic applies in the case of sustainable energy leadership.

Hard Power II - Significant Potential and Challenging Finance

In the Southern Corridor, Turkey's hard power is based on its unique geostrategic position. In the case of sustainable energy leadership, too, Turkey derives substantial hard power from the resources within its own territory. In this case, such power takes the form of energy efficiency and renewable energy potential.

Amongst European countries Turkey ranks first with regard to hydropower, wind, and geothermal potential and second with regard to solar power potential.²¹ It has been said that Turkey is "blessed with an abundance of clean energy resources," presenting "ideal conditions for wind farms," and being the "natural choice for solar energy plants."²² Turkey's renewable energy potential is in principle more than sufficient to fulfill its energy needs. It amounts to three times Turkey's

actual gross energy demand (720 TWh potential as compared to 242 TWh demand in 2012; see Table 2, Annex). The utilization rate of renewables, however, is very low in Turkey. While hydropower capacity is used most extensively, there is ample room for improvement regarding all other forms of renewable energy. Taken together, more than 90% of Turkey's renewable energy potential remains untapped (also see Table 2, Annex).

With regard to energy efficiency, Turkey performs similarly to leading industrialized states and substantially better than major emerging economies (see Figure 2, Annex). Turkey has, however, made little progress in increasing energy efficiency in the last decade. In this regard, it ranks worse than industrialized countries and substantially worse than most emerging economies (see Figure 3). The latter insight suggests that there is substantial energy savings potential in Turkey. Indeed, in monetary terms, this potential has been estimated at more than \$13 billion annually.²³

Taken together, sustainable energy potential strongly supports the idea of Turkey's sustainable energy leadership. Another component of hard power, energy financing, poses a greater challenge. Turkey estimates investment needs in the energy sector to be around \$120 billion until 2023 and is looking for private investment to fill this gap.²⁴ To realize these volumes, Turkey's attractiveness as an investment location is crucial. The focus thus shifts from hard to soft power.

Soft Power I – Efficiency and Renewables Policy Architecture

Leadership necessitates a smart power approach. For Turkey, this means that existing hard power needs to be supplemented with soft power. The basis for such soft power is provided by Turkey's solid sustainable energy policy architecture. This architecture lends credibility to Turkey's political

claims since it ensures that political aims can actually be put into practice. With regard to energy efficiency, Turkey enacted the Energy Efficiency Law (No. 5627) in 2007. A Regulation on Increased Energy Efficiency followed in 2009, and a Strategic Paper on energy efficiency was published in early 2012.²⁵ Operational programs include efficiency investment subsidies, voluntary agreements with industries, awareness campaigns, and support for small and medium-sized companies through providing education and consulting.²⁶

Furthermore, Turkey has been implementing renewable energy policy for more than a decade.²⁷ After initiating large-scale reforms in the energy sector in the early 2000s, a Renewable Energy Law was enacted in 2005 (No. 5346). This law established a purchase obligation for renewable energy production as well as a feed-in tariff. In 2011, policymakers amended the original law (Law No. 6094). Feed-in tariffs were raised, a premium for domestic production was introduced, and tariffs were differentiated to fit the needs of individual renewable technologies (see Table 3, Annex). The Electricity Market Law of 2013 provided further support for renewables. The law raised the maximum capacity for facilities exempted from licensing from 0.5MW to 1MW and reduced licensing cost for other renewable facilities.

Soft Power II – Targets and Implementation

Turkey aims to reduce energy intensity by 20% until 2023. It furthermore aspires to generate 30% of its energy from renewables until then. To achieve the latter target, the country aims to exploit its full technically and economically feasible hydropower potential. It has, furthermore, announced that it will install a capacity of 20GW wind, 3GW solar, and 600MW geothermal power by 2023. The latter two targets were updated to 5GW and 1GW by 2023 respectively in the recent National Renewable Energy Action Plan.²⁸

Policy targets, however, have been criticized in several regards. Criticism has been staged, for example, with regard to the side effects of hydropower expansion: Projects can change river flows and negatively affect ecosystems. The flooding of land can lead to relocations of local populations as well as to the loss of agricultural land and cultural sites. Such problems have become apparent, for example, in the context of the construction of the Ilisu Dam in Southeast Turkey.²⁹

Furthermore, renewable energy - particularly hydro - already comprises approximately 24% of Turkey's energy generation (for current and future electricity production and production capacity see Table 4). This high level of hydropower generation is an important power asset in positioning Turkey as a sustainable energy leader. At the same time, however, it makes the 2023 renewable energy target of 30% look comparatively less ambitious. Oğuz Türkyılmaz, for example, has called for much more ambitious targets of 25-30% hydropower plus 10-15% of other renewable energy production by 2023.³⁰ Particularly, the targets for wind energy and, even more so, those for solar power appear comparatively unambitious given Turkey's great renewable energy potential.³¹ Even the updated solar target of 5GW appears rather low compared to the overall 217GW solar potential in Turkey (see Table 2, Annex).

The overall Turkish energy efficiency goal is roughly in line with EU ambitions to increase energy efficiency (by 20% until 2020). However, this goal is unlikely to be attained. While the new Action Plan confirms the goal in principle, it actually suggests that energy intensity might increase in the future.³² A study of Bloomberg New Energy Finance, too, expects a future decrease of energy efficiency. The same study, furthermore, holds that the target for wind energy also will be missed.³³

Soft Power III - Attractiveness to Sustainable Energy Investors

Another aspect of soft power is, as mentioned above, Turkey's attractiveness to sustainable energy investors. However, here also, the country encounters difficulties. The energy market has been called the most promising sector for investment in Turkey,³⁴ and renewable energies have been named one of the country's potential future key industries.³⁵ Indeed, on a global scale, renewable energy investment has become a market almost as big as and more dynamic than that for fossil fuels.³⁶ Nevertheless, in Turkey market development is hampered by existing policies. Support through feed-in tariffs is considered to be too low, too short (10 years), or not flexible enough by voices from environmental organizations and industry, as well as by some individuals from the administration.³⁷

Commentators have furthermore identified substantial bureaucratic hurdles to renewable energy investment. Particularly the licensing of new projects has been argued to be too complex and time consuming, which has frustrated both small local and larger international investors.³⁸ As some international investors have put it, licensing has been conducted in ways that have "put off" investors "prepared to commit to 'gigawatts of generation' over a long-term horizon."³⁹ Despite the phenomenal growth of its overall energy market - with demand growth second only to China, as Turkey's officials like to emphasize - the attractiveness of Turkey for renewable energy investment is average at best. In Ernst & Young's Renewable Energy Country Attractiveness Index, Turkey ranks 19th out of 40 states.⁴⁰

Soft Power IV - The Role of Coal

Sustainable energy transition not only necessitates the promotion of new forms of energy and the reduction of energy demand. To develop the

legitimacy of a sustainable energy leader, it is also important to reduce unsustainable fossil energy generation. The most unsustainable of fossil resources is coal. Hard coal and particularly low-energy content lignite, however, play an important role in the Turkish energy strategy as Turkey's substantial domestic lignite resources have been perceived as a major means to reduce energy import dependency.⁴¹ Until 2023, Turkey aspires to add 18.5GW of coal-fired electricity generation capacity to its portfolio.⁴² Recent research suggests that, in contrast to renewable energy targets, this target will be more than fulfilled with almost 37GW of new coal-fired generation capacity being planned in Turkey.⁴³ The financing of coal projects has become one of the Turkish banking sector's priorities, and governmental financial support for coal substantially exceeds financial help for renewable technologies.⁴⁴

Such a "dash for coal" would be a certain death knell for any attempt to become a sustainable energy leader. If the Turkish government should follow through on its coal policies, this might increase energy sector carbon emissions by almost 150% until 2023.⁴⁵

The dash is not only threatening Turkey's energy leadership ambitions but also is unnecessary. As the recent study of Bloomberg New Energy Finance shows, there is a viable renewable alternative. The study develops and compares two energy future scenarios for Turkey - one based on the "dash for coal," the other one focusing on sustainable energy solutions. The renewable scenario envisages a share of 21% hydropower and 26% other renewables in Turkey's electricity production of 2030.⁴⁶ The analysis shows that renewable energies are indeed a serious alternative to a coal-based energy strategy. Costs until 2030 are roughly the same for both scenarios (\$400 billion in the coal scenario, \$406 billion in the renewable scenario).

Proponents of coal have hailed the resource for strengthening regional development, reducing

Turkey's trade deficit, and ensuring long-term energy supply security. However, these goals could also be achieved based on domestic renewable energies. Not only in the coal scenario but also in the renewable counterpart, the gas import bill may be reduced by \$8-\$10 billion annually. Depending on the development of a domestic renewable industry, the renewable scenario might reduce Turkey's trade deficit even further by substituting hard coal imports for domestic manufacturing (see Figure 4, Annex).

Given its unsustainable character, a significant increase of hard coal and lignite usage would undermine the legitimacy necessary to generate a smart leadership approach. The alternative renewable energy scenario, in contrast, would work strongly in favor of Turkey's sustainable energy leadership.

Soft Power V - Turkish Energy Policy Credibility

A final point regarding the soft power of Turkey is the credibility of its sustainable energy policies from the perspective of investors and political partners. Such credibility has two dimensions. First, to become a sustainable energy leader, Turkey would have to signal serious commitment to the idea of sustainable energy transition. Only if political leaders and other policymakers are convinced by and committed to this idea then will it become possible to credibly demand a leadership role in global energy governance. In practice, this credibility is hampered by the rhetoric, and, as it seems, the mind-set of many Turkish officials. President Erdoğan, for example, has recently stated, "we need to increase our energy consumption rapidly."⁴⁷ Energy consumption, so it is often purported, is a sign of progress. This idea, however, is incompatible with the objective of transforming energy systems in a sustainable manner, which calls for a decoupling of economic growth and energy consumption.⁴⁸

A second important step for generating credibility is to enhance trust in the long-term predictability and stability of sustainable energy policies. Since the early 2000s, however, Turkey's energy policy has been defined by the urgency to accommodate rapidly growing energy demand. Instead of designing long-term plans and incorporating emerging technologies, the country has focused on immediate necessities and established technologies such as coal.⁴⁹ This approach has not only overlooked that certain renewable energy technologies are indeed well established and cost-competitive by now⁵⁰ but it has also raised uncertainty about the future course of Turkey's energy policy. This reactive approach has yet to give way to a policy approach that is proactively embracing future chances and opportunities in the energy sector.

Turkey's Powers to Lead - Hard Power, Soft Deficits

Taken together, Turkey boasts of both energy savings potential and supreme opportunities to expand electricity generation from renewable energy sources. These hard power features are magnified by Turkey's specific position as an emerging economy. In the context of large energy infrastructure investments, Turkey could lock in either sustainable or unsustainable energy systems throughout the coming years. Other actors are interested in Turkey opting for sustainable energy systems.

Finance, another hard power category, is more challenging. Given Turkey's reliance on private investors, the country's attractiveness as an investment location becomes important. Given its overall growing economy, as well as the global dynamics of renewable energy markets, however, doing so is not impossible. Turkey has furthermore established a solid legislative foundation for sustainable energy transition.

Problems for Turkish sustainable energy leadership, however, emerge in the area of soft power. Sustainable energy investors have been driven away by the complexity of bureaucratic procedures and by uncertainties about the country's long-term energy trajectory. In general, renewable energy targets are less than ambitious, and current policies risk missing these targets. The new National Renewable Energy Action Plan raises hopes that this situation might change in the future. The greatest problems for Turkish soft power as a sustainable energy leader, however, stem from the overall mind-set that seems to regard increasing energy consumption as positive and that supports the country's excessive focus on coal.

Conclusions and Policy Implications - Towards a Smart Energy Vision

Turkey's road to energy leadership remains a bumpy one. As argued in a previous policy brief, neither the current policy of demonstrating strength as an energy power nor a serious commitment to becoming an effective energy hub would make Turkey an energy leader.⁵¹ Thus, this policy brief has explored a third energy vision that might result in real leadership: that of becoming a renewable energy leader among emerging economies.

If Turkey should opt to pursue such a strategy, so it has been argued, it could build on the support of industrialized countries, be a leading example for many emerging economies, and win China as a strong partner. The analysis has shown that Turkey comprises the hard power to become a sustainable energy leader among emerging economies. What Turkey lacks, however, is the soft power to create an overall, smart approach to leadership. While it has developed a strong energy policy architecture; ambitious policy targets, attractiveness for sustainable energy investors, and the political will to undertake a sustainable energy transition are seriously lacking.

Turkey's "dash for coal," moreover, would destroy any chances for sustainable energy leadership. The country could feel the negative international repercussions of this unsustainable approach as early as late November 2015 when the international community will meet in Paris to negotiate a new global climate treaty, and the pressure will rise for Turkey to commit to meaningful climate and sustainable energy policies.

The following recommendations could help Turkey to alleviate these weaknesses, to boost its soft power, and to develop a smart energy vision worthy of a sustainable energy leader:

Targets, Support, and Investment

- Reduce the complexity and increase accessibility and transparency of licensing and tendering processes;
- Revisit sustainable energy targets in light of up-to-date cost estimates of respective technologies and Turkey's overall renewable energy potential; include a realistic reflection on relative cost (dis-)advantages of fossil vs. renewable energy sources; adapt energy targets accordingly;
- Re-evaluate hydropower plans in light of anticipated impacts of climate change on water availability and the interest of local communities; adapt energy targets accordingly;
- Scrutinize the relative (implicit as well as explicit) subsidies for different kinds of fossil and renewable energies; reduce fossil energy subsidies - particularly for coal - and adapt renewable energy subsidies to a level necessary to foster sustainable energy investment;

Long-term Vision and Policy Stability

- To demonstrate long-term policy stability and commitment to the value of sustainable energy transformation, establish a long-term (e.g. 2050) energy roadmap that integrates fossil and sustainable energy policies and puts major emphasis on the latter;
- Guarantee participation of scientific and civil society stakeholders in the abovementioned processes to enhance transparency, policy acceptance, and long-term consensus;

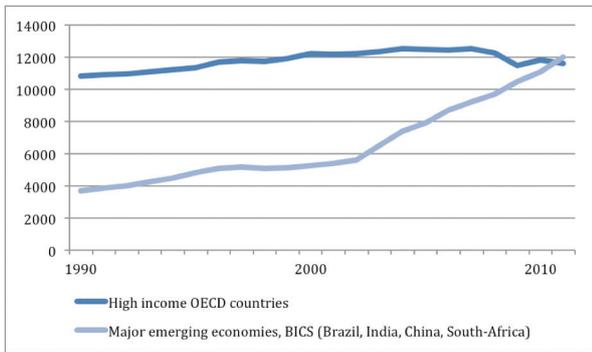
Communication Strategy and international Standing

- Reconsider thinking about the link between economic growth and energy consumption; update communication accordingly;
- Reconsider international energy strategy in a way that highlights Turkey's hydropower electricity generation, its sustainable energy potential, and ongoing policy efforts;
- Foster and push further sustainable energy cooperation with international organizations such as the World Bank, as well as with the European Union;
- Start building regular and stable links to emerging economies with regard to sustainable energy issues.

Taken together, these measures would mark the start of a general re-consideration of Turkey's energy policy on the grounds of long-term sustainability. This would allow for real Turkish energy leadership in the global context. Finally, it is important to note that this way ahead does not hamper Turkey's potential to benefit economically from its position as an energy hub. Indeed, gas is an important part of climate-friendly energy solutions. Sustainable energy leadership, therefore, is compatible with a depoliticized approach to increasing Turkey's position in the gas trade.

Annex

Figure 1: Carbon Dioxide Emissions of High Income OECD Countries and BICS Countries in Million Tons p.a.



Source: World Bank, World Bank Development Indicators (2015), <http://databank.worldbank.org>.

Table 1: Comparative Structural Indicators of Turkey and Most Significant Emerging Economies

	GDP per capita (current US\$, 2014)	GDP per capita growth (annual %, average 2010-2014)	CO ₂ emissions (kg per 2005 US\$ of GDP, 2011)	CO ₂ emissions (metric tons per capita, 2011)	Energy use (kg of oil equivalent) per \$1,000 GDP (constant 2011 PPP, 2012)
Brazil	11612	2.34	0.38	2.23	93.09
China	7593	8.05	2.13	6.71	194.50
India	1630	5.92	1.56	1.70	128.31
South Africa	6477	0.90	1.54	9.26	216.16
Turkey	10542	4.11	0.52	4.39	87.49
High Income OECD	43619	1.23	0.31	10.98	116.23

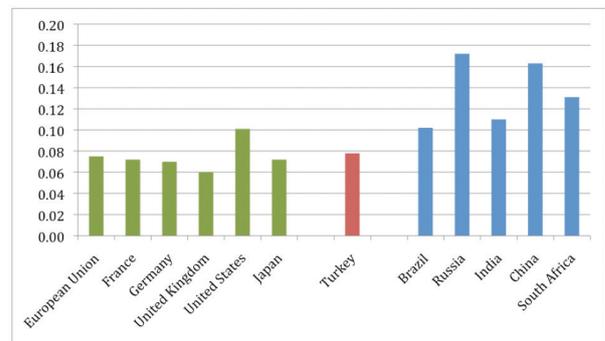
Source: World Bank, World Bank Development Indicators (2015), <http://databank.worldbank.org>.

Table 2: Turkey's Renewable Energy Potential and Usage Ration

Source	Installed Capacity (GW)	Overall Potential (GW)	Unused capacity in % of overall capacity
Hydro energy	23.66	52	64.15
Run-off-the-river hydro		14	
Wind energy	4.5	48	90.63
Solar energy	0.32	217	99.85
Bioenergy	0.15	0.6	75.00
Geothermal (power)	0.34	2	83.00
Total power generation	28.97	332	90.63

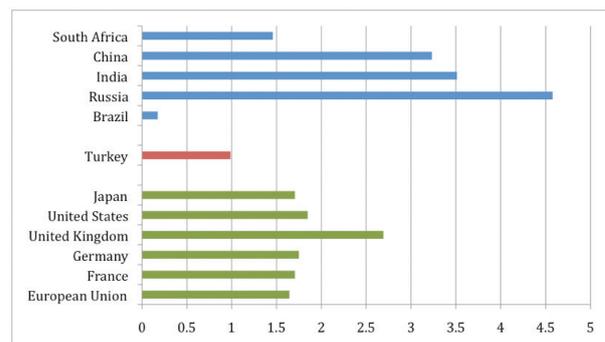
Source: For installed capacity BNEF (2014: 11); for overall potential (Energy Charter Secretariat 2014: 88); unused capacity own calculation.

Figure 2: Turkish Final Energy Intensity Compared to Industrialized and BRICS Countries



Source: Enerdata, Global Energy Statistical Yearbook 2015 (2015), <https://yearbook.enerdata.net/energy-intensity-GDP-by-region.html>.

Figure 3: Turkish Final Energy Intensity Reduction 2000–2011 Compared to Industrialized and BRICS Countries, in Percent



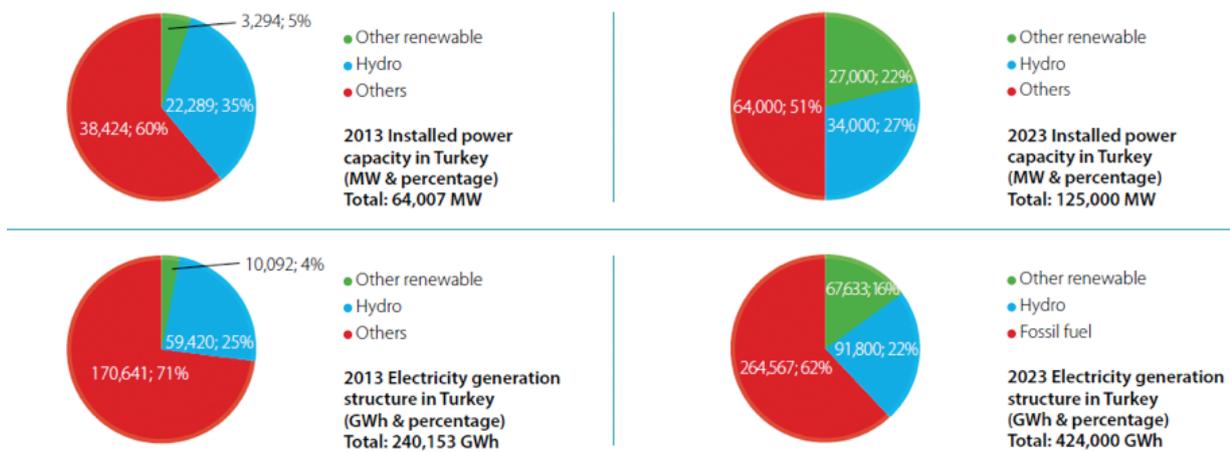
Source: Enerdata, Global Energy Statistical Yearbook 2015 (2015), <https://yearbook.enerdata.net/energy-intensity-GDP-by-region.html>.

Table 3: Turkish Feed-in Tariffs

Type of power plant facility	Feed-in tariff	Maximum local production premium	Maximum possible tariff
Hydroelectric PP	\$7.3 cents/kWh	\$2.3 cents/kWh	\$9.6 cents/kWh
Wind PP	\$7.3 cents/kWh	\$3.7 cents/kWh	\$11 cents/kWh
Geothermal PP	\$10.5 cents/kWh	\$2.7 cents/kWh	\$13.2 cents/kWh
Biomass (including landfill)	\$13.3 cents/kWh	\$5.6 cents/kWh	\$18.9 cents/kWh
Solar PV PP	\$13.3 cents/kWh	\$6.7 cents/kWh	\$20 cents/kWh
Concentrating Solar PP	\$13.3 cents/kWh	\$9.2 cents/kWh	\$22.5 cents/kWh
Total power generation	28.97	332	90.63

Source: PWC, Turkey's Renewable Energy Sector from a Global Perspective (PriceWaterhouseCoopers, 2012), 11.

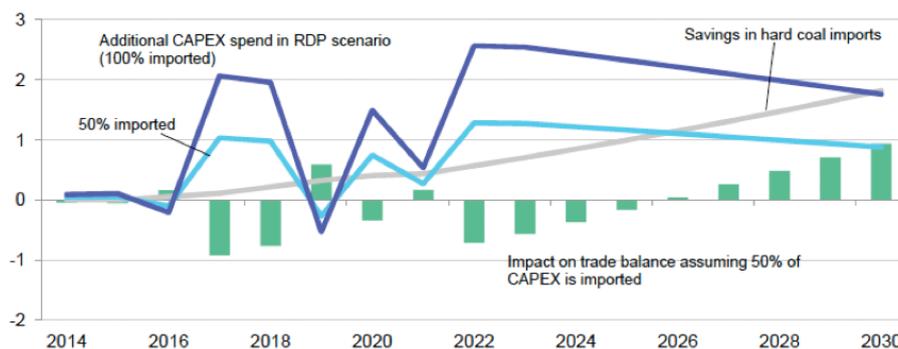
Table 4: Power Capacity and Electricity Generation by Energy Source in 2013 and 2023



Source: Ministry of Energy and Natural Resources, "National Renewable Energy Action Plan for Turkey" (Republic of Turkey, 2015).

Figure 4: Business-as-Usual vs. Renewable Scenario Trade Balance Impacts, 2014-2030, in Billion US\$ nominal

Source: BNEF, Turkey's Changing Power Markets. White Paper (London: Bloomberg New Energy Finance, 2014), 33.



END NOTES

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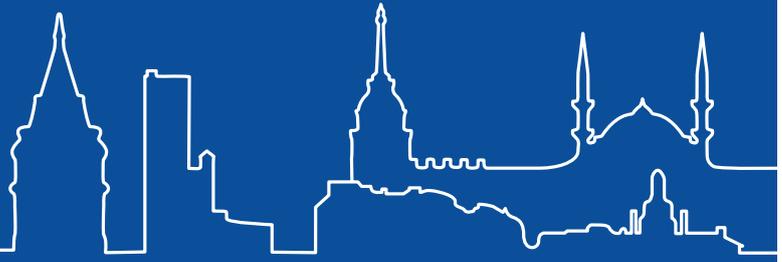
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