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Research Report

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SWP Comment, No. 23/2022

Provided in Cooperation with:

Stiftung Wissenschaft und Politik (SWP), German Institute for International and Security Affairs, Berlin

Suggested Citation: Tastan, Kadri (2022) : Decarbonising EU-Turkey energy cooperation: Challenges and prospects, SWP Comment, No. 23/2022, Stiftung Wissenschaft und Politik (SWP), Berlin, <https://doi.org/10.18449/2022C23>

This Version is available at:

<https://hdl.handle.net/10419/256746>

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SWP Comment

NO. 23 MARCH 2022

Decarbonising EU-Turkey Energy Cooperation: Challenges and Prospects

Kadri Tastan

Russia's attack on Ukraine has once again highlighted Europe's heavy dependence on Russian natural gas and thus, among other things, underlined the significance of energy cooperation between the European Union (EU) and Turkey. Traditionally, Turkish-European energy relations have prioritised the diversification of energy resources in the face of Europe's dependence on Russia. The new emerging political, geopolitical, and energy context will have repercussions on Turkish-European energy relation. However, it is the ambitious process of decarbonisation of the economy and energy launched by the EU that will decisively shape the nature and future of Turkey-EU energy relations. Indeed, both European and Turkish interests related to energy security, energy affordability, and climate change mitigation require EU-Turkey cooperation in the decarbonisation process, which is expected to be very challenging. Energy transition is the key to medium- and long-term energy security for both sides.

Energy relations between the EU and Turkey have always been an important part of their relationship, especially considering Europe's dependence on Russian gas. Therefore, the subject presented a strategic priority for the EU. Turkey aimed at becoming a corridor for energy sources in the Middle East and the Caspian basin towards European consumer markets. The gas pipelines running through Turkey were the basis of this strategic relationship.

Political tensions and uneasy relations between the two sides have obstructed the deepening of relations in the field of energy during the last years. The process of Turkey's accession to the EU, which had also given impetus and provided a framework

for energy cooperation, is at a complete standstill. The EU-Turkey High Level Energy Dialogue – an important platform to deepen energy cooperation between the EU and Turkey – was launched on 16 March 2015 and has been blocked since 2016 due to the domestic political situation in Turkey and tensions between Ankara and the EU.

Thus, Turkish-European cooperation did not develop beyond the transfer of natural gas through Anatolia to South-Eastern European countries. Additionally, the strategic importance of gas running through Turkey to Europe appears to be overestimated, given the current and likely future limited size of the transit. The EU's natural gas consumption amounted to 394 billion cubic

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metres (bcm) in 2020. Two pipelines bring gas to Europe through Turkey. TurkStream has a capacity of 15.75 bcm for European markets, but in 2020 only 5 bcm were transited, which is 1.2 per cent of the EU's gas consumption. The Trans-Adriatic Pipeline is part of the Southern Gas Corridor and provides access to Azeri gas via Turkey over the Trans-Anatolian Gas Pipeline (TANAP). It started operation in December 2020 and is expected to deliver 10 bcm of gas per year to Europe. Even if both networks are operating at full capacity, this will only represent more or less 6.5 per cent of the EU's consumption if figures from 2020 are used. The electricity trade between Turkey and European countries is also considerably limited.

If the EU and its member states want to meet their climate commitments, natural gas cannot be a long-term solution. The European Commission proposed stopping member states from signing any long-term gas contracts that run past 2049.

Therefore, even if natural gas is to be consumed for a considerable time and Turkey's role as a transit country remains crucial to some extent, with the Green Deal and the energy transition, the cooperation based on fossil energies is bound to lose its importance. The same is true for Turkey. To achieve the decarbonisation of its economy in 2053 — the year Ankara aims to reach net zero — the country will undergo a similar difficult process.

In the near future, European countries and Turkey will be facing a very different world in which renewable technologies fundamentally change energy and resource needs, while also confronting the challenges of scarcity and renewed competition for resources. The availability and cost of low-carbon energy sources, especially carbon-free renewable electricity and sustainably produced biomass, will be the most important factors in achieving energy security.

The war in Ukraine and the urgency to decrease Europe's dependence on Russia will accelerate the energy transition in Europe. In this effort, a more cooperative relationship between Turkey and the EU will be beneficial for both parties. This

requires expanding the current framework of their cooperation and taking into account the new realities.

If the new climate and energy reality is not incorporated into Ankara's policies, energy cooperation between Turkey and the EU may lose its strategic nature and become a transactional activity between Turkey and some European countries over the long term, as is the case in many other domains. Therefore, a lucid discussion is needed on the future of EU-Turkey energy cooperation and Turkey's potential role in European energy policy and security.

Evolution of Turkey's Energy Policy

Two major changes have been observed in Turkish energy policy over the last two decades that deserve special mention. In the 1990s, Turkey's energy strategy was primarily intended to ensure its own energy security, and second to support various pipeline projects that crossed Turkish territory, with the ambition of becoming a key player in the regional energy game.

The significance of these two objectives of Turkey's energy policy has increased due to Turkey's economic growth towards the end of the 2000s. But there was also a shift towards meeting Turkey's growing domestic demand and securing affordability. Turkey has always been dependent on imports for energy, and strong economic growth has only increased this dependence. Therefore, accessibility and affordability became priorities. This was the first shift.

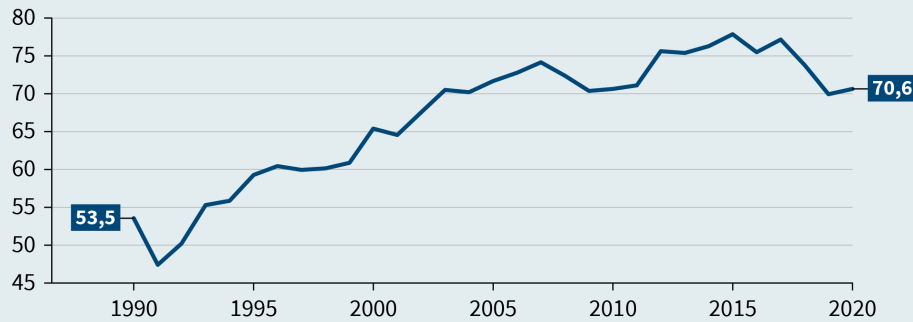
Within the past few years, another shift has occurred, this time towards domestic resources. Even though the Turkish economy is suffering and there is no longer strong economic growth today, energy demand is still growing.

To secure supply, Ankara is trying to develop upstream oil and gas. The recent discovery of gas in the Black Sea is one example. Other examples involve boosting domestic energy production by developing renewable resources, nuclear power, and lignite mining. Turkey's National Energy

Figure 1

Energy imports dependency in Turkey, 1990–2020

Figures in per cent



Source: Eurostat

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Source: Oguz Turkyilmaz, TMMOB Elektrik Muhendisleri Odasi 13.Eneji Sempozyumu (tmmobenerjisempozyumu.org)

and Mining Policy, announced by the Ministry of Energy in 2017, was built around three foundational strategies: indigenisation, improving the security of energy supply, and having a foreseeable energy market. Therefore, the policy focusses primarily on reducing Turkey's reliance on imported energy resources. The Ministry of Energy's Strategic Plan for 2019–2023 also promotes the security of energy supply by increasing indigenous energy production and diversifying energy sources.

As a consequence, renewables and other domestic energy sources are often mentioned in government reports and the political speeches of Turkish officials as being the main priority. However, the emphasis on renewable energies does not appear to be for environmental and climate concerns. For government officials, if Turkey is able to rise to the ranks of other powerful great countries tomorrow, it will be thanks to so-called national energy. This also explains why renewable energies — long neglected, including during the first years of the Justice and Development Party (AKP) government — have now found an important place in politics (see Figure 2, p. 4).

As a result, over the past decade, the country has experienced an important acceleration in the use of renewable energies. This is even though hydropower,

which is reaching its potential limits in Turkey and raises many environmental concerns despite being considered renewable, constitutes the majority of these sources. But at the same time, Turkey's annual coal production in 2018 was 101.5 million tons, the highest level in Turkish history. Therefore, the objective of increasing national resources has two contradictory effects in terms of climate and carbon reduction. The government's policy choice is clear — it promotes energy security with the rationale of cost competitiveness.

Turkey finally ratified the Paris Agreement in October 2021 and set a net-zero emissions target for the year 2053, both of which are positive developments. However, three quarters of Turkey's total energy consumption still comes from fossil fuels, and Ankara has not set a coal phase-out date. Turkey does not have a clear strategy for the decarbonisation of its energy, or its economy in general.

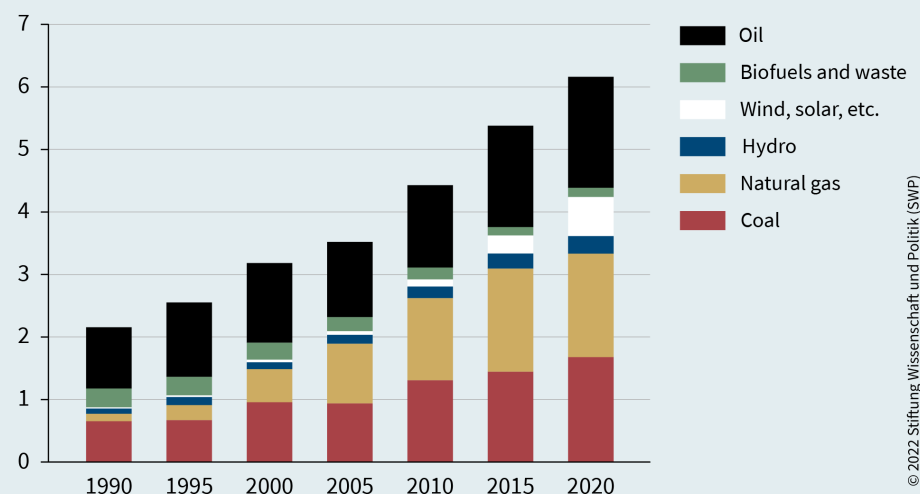
Interactions between the Domestic Political Context, Foreign Policy, and Energy Policy

Turkey's energy policy is also influenced by political developments inside and outside the country in the region.

Figure 2

Total energy supply by source in Turkey, 1990–2020

Figures in million TJ (terajoules)



Source: IEA World Energy Balances, <https://www.iea.org/data-and-statistics/data-product/world-energy-statistics-and-balances>

In recent years, Turkish foreign policy has been affected by several factors, such as the ideological inclinations of the ruling elite, the general sense of insecurity among this elite, and the state of relations with the West and with several neighbouring and non-neighbouring countries in the Middle East. In addition to these factors, ensuring economic growth and consolidating domestic power have also been priorities for the government's survival, which is also reflected in Turkish foreign policy.

Additionally, the role Turkey wants to play at the regional and global levels has also undergone profound changes. Until 10 years ago, the country's leaders wanted to present the country as a bridge between continents, a model country for the region, and a strategic partner for the West.

Today, the country's leaders have a different vision for the country and want it to achieve strategic autonomy, which also requires ensuring the country's economic solvency and energy self-sufficiency. Energy dependence is one of the country's structural weaknesses. The bill for energy imports is very high, as more than 93 per cent of its oil and 98 per cent of its gas come from abroad, which heavily impacts the

total current account deficit. Turkey's energy imports cost \$41 billion in 2019, representing nearly 20 per cent of its total imports of \$210 billion.

Partly as a result of Turkey's new political posture, relations between Turkey and the EU have undergone substantial changes that do not facilitate the deepening of their cooperation in the energy field.

In March 2021 a "positive agenda" was initiated between Turkey and the EU with the de-escalation in the Eastern Mediterranean. As a result, some high-level meetings — notably on climate and migration — have taken place, without unblocking the situation for the High-Level Dialogue on energy. Even if tensions in the Eastern Mediterranean have calmed, European sanctions against certain individuals and companies involved in Ankara's activities in the Eastern Mediterranean are still in place, and the possibility of renewed tensions is blocking the High-Level Dialogue on energy.

The tensions in the Eastern Mediterranean and Ankara's gunboat policy in the region are a perfect manifestation of Ankara's new political-military posture, which may have ramifications for its relations

with the EU. Turkey's present exclusion from the Eastern Mediterranean Gas Forum and Ankara's competing maritime claims with Greece and the Republic of Cyprus also call for clear discussions on the potential for EU-Turkey energy engagement. However, the urgency of climate change and energy transition could potentially become a de-escalating factor in the Eastern Mediterranean context. With the decarbonisation efforts in Europe and the Mediterranean countries, one can expect a reshaping of energy cooperation in the Eastern Mediterranean based on energy transition. This would help reduce political tensions related to natural gas discoveries and contribute to political stability without forgetting its economic and ecological impacts.

However, the trajectory of crisis-driven relations between Turkey and the EU, coupled with Ankara's increasingly close (yet problematic) ties with Moscow, may stand in the way of the development of a genuine energy partnership. Although Turkey has always expressed its commitment to cooperation with the EU in the frame of the Southern Gas Corridor, Ankara has also developed its own political and economic relations with Russia. TurkStream, which is widely considered to be the main competitor to the Southern Gas Corridor, is an example of Turkey's new priorities.

Admittedly, the current energy crisis has reminded us of the importance of the Southern Gas Corridor. The recent visit of Kadri Simson, the European Commissioner for Energy, to Azerbaijan in February 2022 in the middle of a potential energy crisis is a testimony to this. The Russian invasion of Ukraine will increase the importance of Azeri gas in meeting Europe's short-term energy demand. But Azeri gas will only be able to meet a small portion of Europe's needs. And even an increase in TANAP's capacity will not change the long-term challenges.

TANAP is a great achievement for EU-Turkey cooperation in the energy domain. But in the long term, the diversification of supply routes with pipelines is no longer on the agenda for the EU, which undermines

Turkey's significance in the Southern Gas Corridor. No one any longer expects Turkmen, Iranian, or Iraqi gas to reach Europe via Turkey, to expand this corridor, and therefore to increase Turkey's role in the supply of natural gas to Europe.

Climate Emergency and the Shift of Energy Policy in Europe

Today, EU energy policy is based on three "pillars" – climate change mitigation, security of energy supply, and the creation of competitive and integrated markets. Turkey has been important for the security of supply as a transit country. But since the adoption of its 2020 framework in 2007, the EU has increasingly raised the stakes in its climate policy. The EU has integrated energy and climate policy packages for 2030 (Fit for 55 package) and is implementing the European Green Deal to reach the objective of climate neutrality by 2050. This has resulted in greater interaction between energy and climate policies in EU decision-making. Energy production and energy use currently account for almost 77 per cent of the EU's greenhouse gas emissions. Therefore, decarbonisation means a major transformation of the energy sector in Europe.

Estimates already show that the consumption of natural gas in Europe will decrease. To achieve decarbonisation, most energy services currently based on fossil fuels must be replaced by climate-neutral alternatives. Electricity powered by renewables and hydrogen will be essential for this process. Thus, the EU needs to significantly increase the level of electrification of the economy to reach its net-zero emissions target by 2050. But for some sectors, such as heavy industry and transport, which are difficult to electrify, low-carbon gas as well as hydrogen will be necessary. In the legislative package adopted by the Commission in December 2021, this was clearly expressed again through a series of legislative proposals to decarbonise the EU gas market and bring the EU gas regulatory framework into line with the European Green Deal.

This means that EU-Turkey cooperation in the field of energy based on fossil fuels is bound to lose its importance in the next 20 to 30 years. Of course, fossil fuels will still be consumed for a long time, and Turkey's role as a transit country will remain crucial to some degree. However, the transit role played by Turkey has reached its limit with TANAP, despite the current state of high consumption. Even if the capacity of TANAP is hypothetically to be increased or doubled, it does not seem possible for Turkey to write a new page with the EU in the energy field in the long run.

The fight against climate change and the new challenges related to energy security resulting from the energy transition require increased and renewed cooperation between the EU and Turkey for the interests of both sides. The cooperation on energy should also focus now on climate change and mitigation efforts. This is a common challenge that requires cooperation between the two. The EU has the capacity and the leadership to accelerate this process in Turkey.

Second, for its energy transition to be successful, the EU will need to meet the increased demand for green energy. To do so, the EU will most likely have to rely on its neighbours, including Turkey, in the region to meet some of this increased demand. In this sense, Turkey — due to its size, its potential for alternative energy sources, and its diversified and institutional relationship with the EU — requires special attention from the latter. From Turkey's perspective, the issue of energy security and the challenges of climate change also require cooperation with the EU, given Brussels' technical and financial advantages and superiority in energy transition.

Two Opportunities to Explore: Electricity Interconnections and Green Hydrogen

Energy relations between the EU and Turkey need to be rethought to incorporate electricity interconnection and low-carbon gas such as green hydrogen. This may

create a win-win situation, not only in climate terms but also for the EU's and Turkey's futures regarding energy security. Currently, there are three electricity interconnections with Turkey connecting Bulgaria and Greece, so new interconnections between Turkey and European countries will allow more electricity trade, and thus ensure security of supply and network stability for both parties.

Unlike most other EU neighbouring countries, which differ greatly in terms of their technical and commercial rules, a higher level of electricity trade between Turkey and its EU neighbours is facilitated and stimulated by Turkey's membership in the European Network of Transmission System Operators (ENTSO-E). The higher level of electricity interconnection may lead to a higher level of energy cooperation between Turkey and Europe through the facilitating role of the already established institutions.

There is already a high level of regulatory convergence and technical cooperation between Turkey and the EU. This will facilitate cooperation and interconnection in terms of electricity, but reliable and solid political relations between the two and an ambitious environmental policy in Turkey will be necessary to achieve this.

Green hydrogen is also seen as an important component of energy transition, and many national hydrogen policy strategies and initiatives have emerged in recent years. Therefore, green hydrogen appears to be a key priority for the EU to decarbonise energy-intensive sectors, such as the steel and chemical industries. However, to produce the necessary volumes of green hydrogen, huge amounts of renewable electricity will be needed. Given the EU's very ambitious production target, it implies a greater dependence on imports from neighbouring countries.

According to a recently published Shura study, given the renewable energy potential to be tapped, with annual investments of \$3–4 billion up until 2050, Turkey could enable the production of 3.4 million tons of green hydrogen by 2050. The report suggests

that Turkey could export 1.5 to 1.9 million tons of green hydrogen to other countries by 2050 after meeting its domestic needs.

Moreover, beyond becoming a market for Europe, hydrogen would mainly be put towards decarbonisation efforts in Turkish carbon-intensive sectors that will be affected by the carbon border adjustment facility (CBAM). In the long term, hydrogen would also prevent the maintenance of trade relations in sectors that may be affected by CBAM, such as those for cement, iron, steel, aluminium, and electricity.

For cooperation in these two areas (electricity and green hydrogen) to be fruitful and become a reality, the first condition is for Ankara to engage as soon as possible in the very difficult task of energy transition.

Russian Invasion and Its Repercussions

The Russian invasion of Ukraine is a wake-up call for Europe and Turkey with regard to their overreliance on Russian gas. This issue has become a topic for both energy as well as geopolitical security. Turkey and Russia have always had geopolitically competitive relations, in which Ankara's overdependence on Russian energy gave Moscow an important point of leverage while increasing Ankara's vulnerability. The invasion has further accentuated the competitive nature of Turkish-Russian geopolitical ties, with implications for Turkey's energy policy.

We are likely to see several trends in this regard. First, even prior to the invasion, Turkey was already trying to reduce the share of Russian gas in its overall energy portfolio. In its place, Turkey has tried to increase the share of gas from friendlier countries, such as Azerbaijan, perhaps even from Iraqi Kurdistan. Ankara is likely to further invest in this direction. Second, the share of liquefied natural gas is set to increase in Turkey's overall energy consumption arrangement. Again, this was a trend that was already underway prior to the invasion. Third, this process is likely to increase Turkey's appetite for energy ex-

ploration. Fourth, this process is also likely to increase Turkey's appetite for engaging more with the EU on discussions about energy transition. This offers a window of opportunity.

This new situation may push Europeans to find non-Russian sources of fossil fuels to cope with the energy crisis, but it should not alter the medium- and long-term goals of energy transition. The short-term solutions should not derail the long-term priorities of transition.

Conclusion

Regardless of Turkey's energy cooperation with the EU, without implementing an active policy to increase renewable electricity generation, electrify a significant share of energy end-uses, and rapidly phase out coal, the Turkish government will not be able to decarbonise its energy sector. Turkey does not have a clear strategy at the moment that details its actions and strategies to achieve this goal.

Of course, factors such as the energy policies of both sides, political developments in Turkey, and the direction of political relations between Turkey and the EU will define the terms of their energy relations over the long term. Nevertheless, energy transition and decarbonisation would be the key to updating EU-Turkey energy relations to the realities of our time. No doubt, this will depend on the political will of both parties.

Furthermore, decarbonisation would increasingly become the central element of the debate on the EU-Turkey Customs Union and its potential modernisation. Therefore, decarbonisation would be an economic and strategic requirement for Turkey in terms of trade relations with the EU. The introduction of CBAM by the EU will accelerate this need. However, in view of the presidential elections scheduled for June 2023, the consolidation of power and economic growth remain President Tayyip Erdoğan's main priorities, not energy transition and decarbonisation of the economy. Given the

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ISSN (Print) 1861-1761
ISSN (Online) 2747-5107
doi: 10.18449/2022C23

dire state of the Turkish economy, it would be naive to expect the Turkish government to commit to this difficult change before the elections, despite the urgency.

Indeed, the issue of energy cooperation between Turkey and the EU should no longer be treated only as a matter of common strategic or economic interest, but as an integral part of the energy transition and decarbonisation to combat climate change.

Therefore, the EU and Germany should support the decarbonisation process of the energy sector in Turkey. Several factors — such as widespread electrification powered with renewables, energy-efficiency improvements, technological innovation, establishment of the carbon market, and inclusive policies — will be needed to successfully drive the energy transition in Turkey. This transformation will require colossal sources of funding and investment, especially given the country's current difficult economic situation.

The EU should use its various financing and aid mechanisms and tools such as the Pre-Accession Assistance Instrument (Turkey is still officially a candidate country and entitled to receive this fund), the Guarantee for External Actions (GAE), the European Investment Bank (EIB), and the European Bank for Reconstruction and Development (EBRD) to assist Turkey in this transformation. Moreover, the EU has the economic capacity, and European countries have made important technological and regulatory advances in the field of renewable energy. The EU should use this to assert its leadership role in the field of combating climate change also in Turkey.

In this sense, the launch of the High-Level Dialogue on climate between Turkey and the EU last year is a very positive development. However, it is unconceivable today to separate energy and climate. This is why the launching of high-level meetings on energy is so urgent and necessary to move forward on the climate issue as well. Therefore, the EU should without delay (re)launch

the High-Level Dialogue on energy as well. The Turkey-EU High-Level Dialogue on energy and the Turkey-EU High Level Dialogue on climate should be used effectively as strategic platforms. The issues of climate change, energy transition, and decarbonisation of the economy must be top priorities in the Turkey-EU agenda.

Nevertheless, a constructive political dialogue is a prerequisite for the success of this type of cooperation.

Beyond Turkey's close relationship with Russia, since the Russian invasion began, Turkey has been sending strong signals of realignment with the West. But it is still too soon to see how relations between Turkey and the West will evolve with this new geopolitical and security reality that is emerging.

There is a risk that it will be undermined by political crises. Tensions in the Eastern Mediterranean are a good example. Because of the political tensions, Turkey is completely excluded from the energy cooperation that is developing in the region. Cooperation initiatives oriented towards climate-friendly energies in the Eastern Mediterranean and Turkish involvement within such cooperations would also help, though not to solve the maritime issues between Greece and Turkey and the Cypriot question, but rather to reduce the tensions related to the sources of fossil fuels in the Eastern Mediterranean. The EU could play an important political and financial role in encouraging the development of climate-friendly energies in the region. This would also be an opportunity for the EU to extend the leadership role it aspires to in these areas.

Of course, the Eastern Mediterranean is not the only source of tension between Turkey and the EU. In this respect, political normalisation in Turkey seems to be the most essential factor to create opportunities for future dialogue and cooperation in various fields — including energy — with the EU.

Kadri Tastan is IPC-Stiftung Mercator Fellow at the Centre for Applied Turkish Studies (CATS) at SWP.

The Centre for Applied Turkey Studies (CATS) is funded by
Stiftung Mercator and the German Federal Foreign Office.

SWP Comment 23
March 2022

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