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PART 1: Review Comments

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Compulsory REVISION comments	**See comments below…** **It is my understanding of ab out several decades ago, the issue was raised about Turkey getting nuclear energy. The response was to assist Turkey to build-up 30 dams and provide electrical energy by using hydrodynamics. The dams were designed to remove the need for nuclear Power requirements. Is this still true and does this meet current needs?** **Introduction** **Turkey buys comes from only one supplier: Russia. One wonders about using natural gas from Iran or even Azerbaijan. This should be addressed.** **Turkey's demand for energy is expected to increase at about 140 percent of its current consumption by 2020. Why was this not treated years ago?** **Where does wind power or solar energy fit in? The solar radiation on Turkey's latitude should be very high as long as weather permits.** **What about the possibilities of using American natural gas as well as a partnership with the Armenians for sharing electrical energy from Their nuclear reactor. It is my understanding that at least decades ago, energy sharing with Armenia occurred.** **In the Turkish case however, the failure to transfer nuclear technology has a lot to do with domestic politics than the international opposition This is a crucial statement and should be in the abstract. For example, America and Canada as well as other than Russia may not look positive About providing Turkey with nuclear power. What is considered about this factor? Likewise, since it takes about 7-10 years to build a large reactor, what will occur after Erdogan unless he makes himself a caliph or forever leader in Turkey?** **Turkish government signed an agreement with Russia on May 12, 2010 to build four separate NPPs The issue is that the Russians will eventually prefer to have access of these reactors and these costs will escalate. This is the history of selling natural gas to Europe and elsewhere. The other issue is that Russian reactors do not have sufficient safety provisions. For example, concrete domes are used to minimize accidents Due to light aircraft. What are the provisions concerning earthquakes as well. The Ukrainian disaster has to be considered as well as the unfortunate Situation in Japan where the walls were planned to prevent flood above 10 feet once in a hundred years. When the Tsunami hit, although the walls were even higher, at 14 feet, the flooding shorted out electric motors required to drive convectional cooling. This resulted in several cores melting.** **The Ukrainian disaster was due to operating personnel short-comings. In contrast, the American issue at three-mile Island was by far minimal since The dangerous gases were contained in a concrete sphere.**	Dear Sir/Madam, Thank you for your time and input: 1- Turkish electricity needs can no longer be met with building dams as the demand has grown unexpectedly. Therefore Turkey is looking for every possible ways of generating more electricity. 2- Turkey is importing natural gas mainly from 3 players, Russia, Azerbaijan and Iran. The main issue here is that most of the gas is imported from Russia. Also, dependency on natural gas is too high to generate electricity. Building nuclear reactors is a way of diversification of electricity generation, rather than relying on hydro energy and natural gas. (This information I have added and referenced) 3-It is poor planning on the side of former administration and the rapid growing needs of Turkey. (This information I have inserted in the text) 4- As for the solar and wind energy. It is part of the energy layout in page 6 the growth of the share of renewables can be seen. I have addressed this in the text saying that Nuclear power and renewables are not competing in Turkey since Turkey would use any kind of energy available. As for renewables, turkey is troubled with financial woes therefore investment in renewables is slow to come. (page 9-10) 5- Use of American gas at this point is not considered by turkey. it comes in the form of LNG and gets costlier compared to available resources in the region. As for Armenia, The political relations are strained between the two countries therefore cooperation in energy is not a big option for Turkey. Therefore this is not addressed in the text. 6- Current domestic politics is dominated by Erdogan and his party. Therefore there is no credible threat, domestically speaking. Although there are people who oppose to nuclear reactors, they are built and operated by Russia, therefore there is no immediate threat of nuclear reactors becoming a base for international threat. Turkey has never sought nuclear weapons and has no interest in becoming a nuclear power. There is currently no substantial international opposition to Turkish nuclear reactors. That was also an internationally open tender. I have addressed these issues in the text. My article focuses on the value of NPP as an additional source of energy. Therefore I spent more time on issues related to the main topic. (I used the issue of domestic opposition in the abstract as suggested.) 7- There continues to be concerns about the safety of NPPs. However, Turkish government and the building companies are promising to take into every detail. The building is already underway. As for the cost of operation, it will be covered by the Russian company no matter how expensive or cheap this is. The agreement posits that Russia will be responsible for operation and waste management. In the article I avoided getting into the technical details of waste management to make the discussion not too broad for the reader

	There is another issue about Russians. Fuel rods are usually replaced every certain period of time. One policy is that 33% is changed every third year and the reactors are moved to the outside rims for a cylindrical reactor replacing the central portion. What will Turkey do with the spent fuel rods? Will they sit in a water pool just waiting to decay? What about the cost of replacing fuel rods? This cost can be extremely large as 750 million USD depending upon reactor size. On this basis, the Russians may eat that cost with a large share of the reactor's ownership. Moreover, This closes down the reactor for about a month. Thus you will need more than one reactor at a specific station unless you have other considerations For electrical energy distribution. **The author answers some of these issues about future events and Erdogan in the following paragraph. However, this should be expanded.** **It is estimated that a single second interruption in industrial production in large scale manufacturing establishments will result in a financial loss at about 171.000 US dollars. I would have assumed this is viable unless this value is too low. What is this for? IT is not clear. Remember that maintenance cost are usually the same as the initial costs… Such figures are usually ignored…** **Environmentally speaking, nuclear energy production is safer and greener compared to any other fossil fuel, including natural gas which is the least carbon emitter among them This is an interesting comment. Again, what do you do with spent fuel rods? What happens with an accident? I feel safer with CO2 than some iodine and Uranium material that is accidently scattered around…** **In the light of the current debates, we can conclude that there is no global trend in favor or against nuclear energy production and building new generators I disagree and are mentioned previously above…** **You cover part of the waste management problem. It is not trivial.**	and keep it on policy aspects. 8- The debate on the value of NPP is not new. However my point is based on the needs and capabilities of the countries. I give no preference to NPP over renewables or other sources. However confronted with electricity shortage and increasing demands, Turkey has to consider every possible options. As far as the world goes, there are several countries already building new NPPs. But I believe the debate will continue. The core idea in my article is that NPPs can be source of diversification to provide extra electricity that is needed. The safety concerns and other options as you mentioned will and should continue to be an issue of discussion. Thank you for your comments and contributions.
Minor REVISION comments		
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PART 2:

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	