

# EUCERS Newsletter

**Newsletter of the European Centre for Energy and  
Resource Security (EUCERS)**

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## Introduction

Dear readers and friends of EUCERS,

It is my great pleasure to welcome you to this edition of the EUCERS newsletter, in which we present you with two articles.

In the first article, energy researcher Aurélie Bros, a postdoctoral fellow at Harvard University, takes a closer look at the sanctions regime that Iran faces.

The second article, written by Vera Dickhoff, a Master's student at the Freie Universität Berlin, assesses the options of peacebuilding in Colombia through sustainable energy development.

We would like to invite you to the first EUCERS/KAS Energy Talk 2019 that will assess the effects of renewables on global decarbonisation efforts. If you have not signed up yet, please do so by the end of this week.

As always, please feel free to keep us informed about your research projects and findings as we look to remain at the forefront of new knowledge and innovative ideas.

Thank you for your interest in EUCERS and for being part of our community.

Yours faithfully,  
**Thomas Fröhlich**  
EUCERS Newsletter Editor

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## ARTICLES

### **Iran's energy sector's ups and downs: How do sanctions and structural problems hamper efforts to become a global player?**

By Aurélie Bros

*In 2018, the Islamic Republic of Iran held about 17 percent of global proven natural gas reserves, and 9 percent of global proven oil reserves (the second-largest and the fourth-largest proven reserves respectively).<sup>1</sup> Despite this amount of proved reserves, the country has only been a marginal player in hydrocarbon trade over the last decades. Long-lasting sanctions against Tehran have been devastating to the oil-dependent economy, and the country overall, since they have severely hit its energy and financial sectors. The lack of international support, the economic and political isolation, as well as disconnection from global energy markets, have cornered Tehran. Nevertheless, the effects of sanctions alone cannot explain this situation. Structural problems, which hinder the modernization and diversification of the Iranian economy have been further exacerbated. It is noteworthy that the production and export of hydrocarbons in Iran have had a distorting effect on the economy, back to the time when Mohammad Reza Pahlavi was the Shah of Imperial Iran (1941-1979).*

*The aim of this study is to shed light on how Iran has been trying to become a major player in the hydrocarbon commerce despite a plethora of challenges both at national and international levels.*

#### **The development of the Iranian energy sector thwarted by awkward internal economic and political decisions (1941-2013)**

When Mohammad Reza Shah was in power, Iran was one of the leading suppliers of oil, and rapidly became a 'rentier state' (a term coined by the Iranian economist Hossein Mahdavy in 1970), which in turn hampered Iran's economic development. The rent mainly financed (i) the Savak (Iranian security services) and the army, especially during the 1970s, (ii) poorly-designed industrial megaprojects, and

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(iii) the so-called White Revolution in 1963, which included a program of radical economic and social reforms.<sup>2</sup>

Iran's forced modernization was too rapid, and the Islamic Revolution soon followed the White Revolution. The period after Ayatollah Ruhollah Khomeini came to power as Supreme Leader (1979-1989) was characterized by the nationalization of the main energy companies. The industry sector entered a period of stagnation and the major projects launched under the Shah were either stopped or slowed down, while the energy sector had already been crippled by the cost of the eight years of war with Iraq (1980-1988) and the consequences of periods of low oil prices.

The presidency of Mohammad Khatami (1997-2005) did not initiate major reforms either. This was mainly due to conservative forces fighting against economic and political openness.<sup>3</sup> During the same period, unelected institutions such as the Islamic Revolutionary Guard Corps (IRGC), grew stronger and opposed significant change.

The Presidency of Mahmoud Ahmadinejad (2005-2013) led to increasing tensions with the West and increased Western support for new sanctions against Iran. On the one hand, Iran's economic development during Ahmadinejad's presidency was influenced by international sanctions, but on the other hand, many structural factors and internal decisions resulted in economic damage just as disastrous as sanctions:

- **The 'resistance economy'**: This economic model<sup>4</sup>, was one of Tehran's responses to sanctions implemented from 2006. It was supposed to result in the comprehensive modernization of Iran's

<sup>1</sup> British Petroleum. *BP Statistical Review of World Energy*. June 2018, 52p.

<sup>2</sup> Vladimir Grigoryev; Andrey Movchan; Alexander Zotin. "Managing the Resource Curse Strategies of Oil-Dependent Economies in the Modern Era", *Carnegie Moscow Center & British Embassy Moscow*, April 2017, 136p.

<sup>3</sup> "Iran's reformist president set for re-election", *The Guardian*, June 5, 2001

<sup>4</sup> presented in September 2010 by Supreme Leader Ayatollah Ali Khamenei

economy in order to reduce the reliance on a single commodity. Some of the ways in which the economic model would enact this modernization include the expansion of domestic capabilities, the reduction of dependence on oil exports, and the setting up of efforts for self-reliance via substitution.<sup>5</sup> However, it did not result in the modernization of the economy. Rather, Iran grew poorer and became increasingly vulnerable to economic pressure, while it led to a massive knowledge deficit.

- **Costly and inefficient subsidies:** They encumbered the economy and discouraged private investments. For example, the government initiated a reform of subsidies on energy products (e.g. gasoline, natural gas, and diesel fuel). As a result, prices escalated. In response to that, the government offered cash subsidies to low-income households, but in the end, it increased the government's fiscal burden significantly via the cash subsidies.<sup>6</sup>
- **Overconsumption and energy inefficiency arising from heavily subsidized energy prices:** Low prices, along with rising urbanization and a growing population increased energy consumption. This contributed to Tehran's inability to become a net gas exporter as domestic demand outstrips supply.
- **Bureaucratic red-tape:** They were an obstacle to foreign investments, while factional competition and rent-seeking inside the country called into question Iran's reliability as a trade partner.

Energy is a seed of discord within the Islamic Republic dividing those in favor of the reintegration of Iran into the international community and the more conservative forces, such as the IRGC, who believe that international collaboration would increase vulnerability. Over the past decade, the IRGC has gained the upper hand in the energy industry<sup>7</sup>. This has led to a paradoxical situation. On the one hand, the energy sector was in dire straits due to a lack of international investments and no access to Western

technology. On the other hand, the IRGC was reluctant to cooperation.

### **Sanctioning the Iranian energy sector: towards increasing isolation (1979-2013)**

Sanctions against Iran are numerous and date back to the 1979 Iran hostage crisis. The sanction regime has been imposed for a variety of reasons: support for terrorism, violation of human rights, and Tehran's efforts to acquire the capability to build nuclear weapons, coupled with the development of a ballistic missile program. It can be divided into three distinct categories: (i) US unilateral sanctions (imposed between 1979 until 2013), (ii) European Union (EU) sanctions (imposed between 2007 and 2012), and (iii) international sanctions passed by the United Nations Security Council (UNSC) (imposed between 2006 and 2010).<sup>8</sup>

US unilateral sanctions imposed from 1979 until 2005 impacted Iranian oil production and exports. The 1996 *Iran and Libya Sanctions Act* issued by the Clinton administration imposed secondary sanctions (i.e. US or foreign persons/entities supporting targeted actors can be subject to penalties, and numerous restrictive measures such as the exclusion from the American financial system). The extraterritoriality of US law raised concerns within the EU. After a one-year trial of strength, Washington waived sanctions to win European support on other matters.<sup>9</sup> But the election of Mahmoud Ahmadinejad was a game changer. Washington and Brussels decided to impose unilateral sanctions on Iran's energy sector from 2006 until 2013. Over the years, US and EU sanctions took a serious toll on Iran's economy, but they never prevented Tehran from continuing its nuclear program. They were gradually hardened, especially after 2010, the year in which Tehran increased its uranium enrichment level above 20 percent.<sup>10</sup> As demonstrated by David Ramin Jalilvand, sanctions passed before 2010 focused primarily on limiting Iran's access to global finance.<sup>11</sup> After 2010, Western powers focused on incapacitating Iran's ability to benefit from its oil and gas industry and eliminating the possibility of international trade, which limited Iranian activities to

<sup>5</sup> Shamseddin Jalili Piran & Mohammad Soleymani Dorche, "Resistance Economy in International Law", *International journal of humanities and cultural studies*, December 2015, pp. 646-653

<sup>6</sup> Nader Habibi, "The Economic Legacy of Mahmoud Ahmadinejad", Middle East Brief No73, *Crown Center for Middle East Studies, Brandeis University*, Boston, June 2013, 9p.

<sup>7</sup> David Ramin Jalilvand, "Iran's gas exports: can past failure become future success?", *OIES*, Oxford, June 2013, 36p.

<sup>8</sup> The latter are not analyzed in this study since they target Tehran's nuclear and ballistic missile programs, and do not affect the energy sector due to Chinese and Russian opposition.

<sup>9</sup> "To clear air with Europe, US waives some sanctions", *The New York Times*, May 19, 1998

<sup>10</sup> "West alarmed as Iran steps up enrichment of uranium stocks", *The Guardian*, February 7, 2010

<sup>11</sup> Ibid (6)

regional trade. These earlier sanctions increased the sense of risk in international business and questioned Tehran's legitimacy, as well as its diplomatic reputation on the international stage.

**For an overview of the main consequences of US and EU sanctions on Iran, see table at the end of the text.**

#### Making the Iranian energy sector great again (2013 until May 2018)

In August 2013, Hassan Rohani, representing the relatively moderate and reformist faction, won the presidential election and started working to reintegrate Iran into the international community. At that time, his country was in a grim situation. The banking system was broken. Tehran was running out of hard currency. There was no reform that could solve the problem. Such a situation forced Iran to the negotiation table in 2013.

The Obama Administration and the EU coordinated the lifting of numerous key sanctions against Iran (including energy-related sanctions) in return for limitations and greater inspections of Tehran's nuclear program.<sup>12</sup> The Joint Comprehensive Plan of Action (JCPOA) was drafted in July 2015 between Iran and the 'E3+3' (i.e. France, Germany and Great Britain, plus China, Russia, and the United States) and it was put into effect on January 16, 2016. It opened the door for international cooperation and encouraged a number of international companies to move back to Iran, starting with the French international oil company (IOC) Total.

Tehran started to reintegrate its energy sector into international markets and to benefit from the ongoing normalization of relations with the international community. Its principal objectives were to:

- develop oil and gas production,
- increase oil exports,
- expand natural gas output to meet growing domestic demand and avoid becoming a net gas importer,
- attract investments and facilitate technology transfer,
- diversify its international energy portfolio,

- and extend and modernize its gas value chain to (i) meet skyrocketing domestic consumption, (ii) increase its production and export capacity, and (iii) maintain its oil production.<sup>13</sup>

To that end, Tehran started to revamp its downstream sector. Due to seasonal variation in domestic demand for gas, the Iranian Oil Ministry made the decision to increase the number of natural gas storage facilities. So far, the country has a storage capacity of 9 Bcm per year (i.e. the Sarajeh facility has 5 Bcm, and the Shourijeh facility has 4 Bcm). Iranian stakeholders then started to expand their gas infrastructures (e.g. gas pipelines, compression stations, etc.)<sup>14</sup> and found one new market for export: in June 2017, Iran started exporting gas (7 mcm/d) to Iraq, which is implementing the electrification of the country.<sup>15</sup> Thus, Tehran killed two birds with one stone.

Iranian leaders were also eager to increase oil production and exports to Asia and Europe, and quickly surpassed pre-2012 levels. The country reiterated its intentions to restore its share of OPEC production, which led to heated discussions within the intergovernmental oil organization. Throughout the negotiations on the 2016 agreement during which OPEC and non-OPEC producers agreed to jointly curtail oil output in order to ease the global glut and thereby increase prices,<sup>16</sup> the longstanding enmity between Tehran and Riyadh intensified. Saudi Arabia (OPEC's main producer) fought to maintain its market share, whereas Tehran tussled over its comeback as a power broker inside the OPEC. Iran asked other OPEC members to reduce their excess production in order to preserve the cap on total OPEC production. Iranian oil output increased significantly in 2016, and in 2017, Tehran produced nearly 4.7 million barrels per day of petroleum and other liquids.<sup>17</sup> At that time, the Iranian oil ministry's ambition was to continue to increase production capacity.

The French company Total started investing again in the gas sector, restarting its long history with Iran. In July 2017, the company signed a 4.8 billion USD contract with the *National Iranian Oil Company* (NIOC) for the development and production of phase 11 of South Pars (SP11) (Iran's largest natural gas field located in the Persian Gulf) in order

<sup>12</sup> Some sanctions could not be removed as they were related to other issues (e.g. terrorism support, ballistic missile development, human rights abuses, and money laundering).

<sup>13</sup> Gas reinjection is a method used to improve oil recovery.

<sup>14</sup> "Boosting Gas Storage Capacity on Agenda", *Financial Tribune*, January 28, 2018

<sup>15</sup> David Ramin Jalilvand, "Progress, challenges, uncertainty: ambivalent times for Iran's energy sector", *OIES*, Oxford, April 2018.

<sup>16</sup> "OPEC, non-OPEC agree first global oil pact since 2001", *Reuters*, December 10, 2016

<sup>17</sup> "Country Analysis Brief: Iran", *US Energy Information Administration*, April 2018, 21p.

to supply the Iranian domestic market with natural gas by 2021. Total's return is unique because no other EU or US IOC followed suit. It should be noted that Total decided not to invest in the oil sector, even after the signature of the JCPOA. Rather, the company merely bought Iranian oil, which is predominantly exported to European refineries. Unlike Total, the Russian state-owned company Zarubezhneft decided to invest in the Iranian oil sector and signed two major contracts with NIOC<sup>18</sup> to exploit the Aban and the Western Paydar oil fields in a consortium with Dana Energy. Russia agreed to transfer technology and expertise for enhanced oil recovery technologies,<sup>19</sup> a decision that may be read as a Russian refusal to give in to US pressure.

From an Iranian perspective, exporting oil towards Europe was part of the reestablishment and normalization of diplomatic relations with Brussels. This renewed relationship acted as leverage for Iran *vis-à-vis* Washington, which is able to reimpose sanctions on a whim. The reestablishment of diplomatic relations between Tehran and Brussels was also a potential basis for the expansion of economic relations that are helpful in attracting investments and technology providers (not only in the energy area). For instance, Germany was very interested in exporting factory machinery, construction equipment, and a power grid infrastructure to Iran, due to the nature of the Iranian economy, a fast-growing emerging market.<sup>20</sup> The German conglomerate Siemens signed a contract with the Iranian Mapna to sell gas turbines for the Bandar Abbas project and to transfer know-how for F-class turbine technology in 2016.<sup>21</sup> However, the above-mentioned structural problems were numerous enough to put a damper on European enthusiasm.

In most instances, Tehran tried to strike a balance between Europe and Asia, between private Western IOCs and Russian/Chinese IOCs with close links to their respective governments, and between national and private Iranian oil companies. Following the implementation of the JCPOA,

the policy of 'openness' is mainly the result of the sixth Five-Year Development Plan between 2016 and 2021, which has been drafted by the Expediency Discernment Council in order to modernize the Iranian economy. The Plan was driven by: (i) economic growth, (ii) improving the position of the country at regional and international levels, and (iii) improving the business environment and competitiveness. Iran, led by the 'moderate' faction, embarked upon several reforms, like the implementation of a new taxation regime in 2018, which was supposed to increase transparency (especially between key market players and the government), to modernize the financial sector, and to prevent monopolies.<sup>22</sup> That suggested that the country was focusing on making the domestic business climate welcoming to foreign companies.

#### The reintroduction of US sanctions: from hope to disillusionment (May 2018 until today)

In May 2018, Washington formalized its withdrawal from the JCPOA, before adding Iran's central bank governor to the sanctions list.<sup>23</sup> Abdul Nasser Hemmati replaced the previous bank governor in July 2018, a sign that Hassan Rouhani was reshuffling his economic team in response to US pressure. The US Treasury set two phases for the reintroduction of sanctions: a 90-day wind-down period, which expired on August 6, 2018, and a 180-day wind-down period, which expired on November 4, 2018.<sup>24</sup> These 'wind-downs' are given by the US government to allow companies to conclude their business and pull investments out of Iran due to secondary sanctions.

The second round of sanctions that came into force in November 2018 had hard consequences for the energy sector, as well as all related industries, like companies involved in shipping oil from Iran and the financial infrastructure behind it. Currently, crude oil exports and petroleum products (e.g. liquefied petroleum gases, motor gasoline, kerosene, aviation gasoline, petrochemical feedstock, waxes, lubricants, etc.) are affected by sanctions.

<sup>18</sup> "Istochnik: 'Zarubezhneft' pervaya iz rossiiskikh kompanii podpishet dva kontrakta s Iranom". [Zarubezhneft, the first Russian company to sign two contracts with Iran], *Tass.ru*, March 14, 2018

<sup>19</sup> Gas in Iran has not strategic interest for Russia as it will come to compete Russian gas.

<sup>20</sup> World Bank, *Islamic Republic of Iran*, Official website, April 1, 2018

<http://www.worldbank.org/en/country/iran/overview>

<sup>21</sup> "Siemens und iranische MAPNA unterzeichnen weitreichende Energieabkommen", [Siemens and the Iranian MAPNA sign far-reaching energy agreements], *Press Release Siemens*, March 2, 2016

<sup>22</sup> "متن کامل شریفی لایحه طرح توسعه منتشر شده است". [The full text of the sixth development plan bill has been released], *Dolat.ir*, August 2, 2016

<sup>23</sup> "آمریکا تحریم ها علیه رئیس بانک مرکزی ایران و دیگر مقامات را تحمیل کرد" [America imposed sanctions on the head of the Iranian Central Bank and another officials], *da.azadiradio*, May 16, 2018

<sup>24</sup> US Department of the Treasury, May 2018 Guidance on Reimposing Certain Sanctions with Respect to Iran

[https://www.treasury.gov/resource-center/sanctions/Programs/Pages/052018\\_iran\\_guidance\\_archive.aspx](https://www.treasury.gov/resource-center/sanctions/Programs/Pages/052018_iran_guidance_archive.aspx)

Thus, Tehran has to address the twofold problem: (i) lack of modern technology and (ii) dwindling investments.

In the short term, the reintroduction of US sanctions has resulted in:

- **A fall of Iran's oil production**, as a result of (i) declining investments, (ii) limited access to modern technology, and (iii) the difficult expansion of gas production;<sup>25</sup>
- **Oil export restraints**: Even though Iran's biggest oil-buying customers (China, Greece, India, Italy, Japan, South Korea, Taiwan, and Turkey) are authorized to escape US sanctions and continue imports without penalties until April 2019,<sup>26</sup> Iranian's activities will be limited to regional trade, as they were in the early-2010s.
- **Western disengagement**: Traders, refiners, insurers, shippers, and most stakeholders active in the oil and gas industry are refraining from trading with Iran for fear of secondary sanctions. Washington's pressure on buyers of Iranian oil has dramatically increased over the past few months. Several countries have agreed to cut or even stop the import of crude and liquefied petroleum gas from Iran.
- **China's increasing presence in Iranian energy sector**: Both Total and Zarubezhneft pulled out of Iran since no sanction waivers were issued.<sup>27</sup> The French company's Chinese partner CNPC, which already held a 30 percent share in the project, bought Total's shares, which total 50.1 percent. Unlike Western IOCs, Chinese IOCs are state-owned and are less exposed to the American market. Hence, there is little reason to believe that Beijing might curb economic ties with Tehran. The Trump administration's policy is (consciously or not) increasing the 'sinicization' of Iranian hydrocarbon projects and undermining the fragile balance that Tehran had found between private Western IOCs and state-owned IOCs.

It would be speculative to try to predict the future, however the following issues should be addressed, since they could have dramatic consequences in the long term:

- **Will the power struggle inside Iran intensify?** The long-standing polarization between the moderates supporting openness policies and the conservatives against cooperation with foreign companies might intensify. So far, the Supreme Leader Khamenei continues to provide support to President Hassan Rouhani, who still supports the JCPOA. Nevertheless, if the deal delivers nothing in the coming month or years, this might influence the 2020 parliamentary elections and the 2021 presidential elections. Conservative forces may call for inward looking and protectionist policies. Previous sanctions dramatically reinforced the position of the IRGC in Iran, although the US objective was to weaken its stronghold.
- **Will anti-American sentiments lead to greater understanding between Iran and some of its neighbors?** In late 2018, Tehran and Islamabad have resumed discussions on the potential realization of the Iran-Pakistan gas pipeline, a project blocked by Washington over the past years.<sup>28</sup> Moving past the simple discussion of energy cooperation, it is necessary to note that the current US administration's official rhetoric on both countries has varied only in degrees of negativity. It has driven cooperation between these two countries who bonded over their anti-American sentiments.
- **How much will this new wave of sanctions damage the transatlantic relationship?** The reintroduction of US sanctions has provoked an outcry in the EU. Brussels made it clear that Europe will seek to protect its companies, while salvaging the nuclear deal, at a time when the US and Europe are drifting apart. Consequently, Washington is about to feel the ramifications of the reintroduction of sanctions, since it will encourage Beijing, Brussels, Moscow, and maybe other capitals to find ways around the US led-financial system. On August 7, 2018, the EU updated the so-called 'blocking statute' (Council Regulation No. 2271/96, OJ. L 309/1, voted in 1996) in support of the Iran nuclear deal.<sup>29</sup> As long as Tehran complies with the JCPOA, Brussels will encourage European

<sup>25</sup> Natural gas is reinjected into a reservoir to increase pressure and induce the flow of crude oil.

<sup>26</sup> US Department of the Treasury, Iran Sanctions <https://www.treasury.gov/resource-center/sanctions/Programs/pages/iran.aspx>

<sup>27</sup> "UPDATE 1-Total tells Iran it's quitting South Pars gas project", *Reuters*, August 20, 2018

<sup>28</sup> "Islamabad Committed to Iran pipe: Minister", *Natural Gas World*, September 13, 2018

<sup>29</sup> "Updated Blocking Statute in support of Iran nuclear deal enters into force", *Press Release – European Commission*, August 6, 2018

companies to keep trading with Iran by banning EU businesses from “*complying with US sanctions*.” In other words, the EU gives its companies a mandate not to change their behavior, and even amended some laws listed in the appendix of the aforementioned regulation. The main objectives of this EU regulation are to: (i) remove obstacles for the European Investment Bank to finance activities in Iran, (ii) strengthen sectoral cooperation (including financial assistance), and (iii) develop relations with the Iranian Central Bank in order to make one-off bank transfers possible, which is the only way to ensure payments to Iran. As mentioned, however, this is no miraculous solution. Total left Iran, and Siemens is scaling back its business operations.

- **Will the EU keep Iran in the JCPOA?** In addition to the blocking statute, the EU, led by Berlin, London, and Paris, is working on the implementation of the ‘Special Purpose Vehicle’ (SPV), which came into effect on November 4, 2018. The SPV could facilitate payments related to Iran’s exports, including oil, and imports. It would work as a barter system to avoid the US financial system. Brussels is also embracing a kind of de-dollarization process. From a European perspective, it is the last chance to keep Iran inside the JCPOA agreement to avoid the damages of the collapse of the deal (e.g. ballistic advancements, greater involvement in Syria, and possible direct military confrontation between Iran and its foes).

### Conclusion

As many commodity-driven economies, Iran has become highly dependent on access to energy markets, oil prices, and modern technologies and investments in the energy sector (mostly from Western countries). Both, sanctions and structural problems have isolated the country over the last decades.

Since the election of Hassan Rohani, Tehran has tried to (i) avoid marginalization, (ii) maintain the diversification of its portfolio of economic partners, (iii) assert its credibility as economic partner, (iv) protect itself from US power, and (v) resolve internal issues via reforms. But Washington’s withdrawal from JCPOA has put an end to these tendencies (a murky situation makes business with Iran riskier). The Trump administration has made isolating Iran a focus of its foreign policy. It seems that its main purpose is to cut Iran off from the world energy markets, which will significantly

affect the Iranian economy and stability. However, the reintroduction of sanctions against Tehran in a very haphazard manner could have negative results for Washington and significantly damage the EU-US relationship.

**Table 1: Main consequences of US & EU sanctions.**

Main sanctions	Energy sector	Financial sector
<p><b>US</b></p> <ul style="list-style-type: none"> <li>-Executive Order 12613 (1987)</li> <li>-Iran and Libya Act (1996)</li> <li>-Comprehensive Iran Sanctions, Accountability and Divestment Act (2010)</li> <li>-Executive Order 13590 (2011)</li> <li>-Patriot Act; Section 311 Monetary Laundering (2011)</li> <li>-NDAA FY 2012, Section 1245 (2011)</li> <li>-Executive Order 13599 (2012)</li> <li>-Executive Order 13608 (2012)</li> <li>-Executive Order 13622 (2012)</li> <li>-Iran Threat Reduction and Syria Human Rights Act of 2012 (2012)</li> <li>-Iran Freedom and Counter-Proliferation Act of 2012 (2012)</li> <li>-Executive Order 13645 (2013)</li> </ul> <p><b>EU</b></p> <ul style="list-style-type: none"> <li>-Council Common Position 2007/140/CFSP (2007)</li> <li>-Council Decision 2010/413/CFSP (2010)</li> <li>-Council Decision 2011/235/CFSP (2011)</li> <li>-Council Decision 2012/35/CFSP (2012)</li> <li>-Council Decision 2012/152/CFSP (2012)</li> <li>-Council Decision 2012/635/CFSP (2012)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Reduction of oil and condensate exports due to the embargo on oil. Only China, India, Japan, South Korea, Taiwan and Turkey were allowed to purchase Iranian oil;</li> <li>✓ The economic rent disappeared. Oil revenues from sales to these six countries could only be used to buy humanitarian goods or goods from one of these countries;</li> <li>✓ Reduction of oil production &amp; transport because of the prohibition on Western companies to provide insurance/reinsurance services;</li> <li>✓ impossibility of developing the liquefied natural gas (LNG) sector partly due to (i) the restriction to services to Iran's shipping/shipbuilding industry, and (ii) lack of technology;</li> <li>✓ Cancellation of projects led by Western foreign companies. This increased the contraction of oil production;</li> <li>✓ Decreasing refining capacity;</li> <li>✓ Growing difficulties in developing and modernizing the oil sector. Western companies were not allowed to sell the necessary technology and equipment, and most left Iran.</li> <li>✓ Elimination of Iran from regional and global gas markets despite its huge reserves. Iran managed to export natural gas through pipelines to Turkey, and some marginal volumes to Armenia and Azerbaijan. Iran exported small volumes of gas to Nakhchivan (an Azeri landlocked exclave located between Iran, Armenia and Turkey) in exchange for small volumes of gas from Azerbaijan through the Hajiqabul-Astara pipeline.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Isolation of Iran's Central Bank (which receives payments of Iranian oil)</li> <li>✓ The EU froze its assets and the U.S. designated Iran as a jurisdiction of "primary money-laundering concern";</li> <li>✓ Unplugging Iranian banks from the international financial system by disconnecting them from SWIFT;</li> <li>✓ Blocking access of the largest Iranian banks to the U.S. financial system and imposing an embargo on all U.S. dollar transactions. Iran became a financial pariah and it was impossible to engage in normal business;</li> <li>✓ Negative implications of the 'chilling effect'. Sanctions have a major psychological impact that must not be underestimated because they tend to lead to self-restraint on the side of private investors, starting with financial institutions (FIs). Generally, stakeholders and FIs refuse to carry out commercial activities in a country under sanction and feel they should choose between doing business in the sanctioned country or in the USA.</li> </ul>

Source: Aurélie Bros, 2018. Based on David Ramin Jalilvand (2013), Gary Samore (2015), Aurélie Bros & Igor Delanoë (2017), and OFAC's website

## Renewable Energy Law as a Tool for Post-Agreement Environmental Peacebuilding Efforts in Caquetá, Colombia

By Vera Dickhoff

*Caquetá, a department located in the Colombian Amazon and considered a former FARC stronghold, has suffered intensely in 52 years of conflict. It is considered to be one of the most vulnerable regions, requiring a focus of current post-agreement peacebuilding efforts (Rodríguez Garavito et al., 2017, p. 46). In the Colombian Peace Agreement, unequal development rates between urban and rural regions were recognised as one of the causes of the endurance of the conflict (GOV FARC, 2016, p. 7). A key prerequisite to the development of modern society is a constant and reliable access to energy, something that Caquetá, a department which is not connected to the national interconnected energy network and home to 477.642 people, lacks. (DANE, 2015, p. 88; IPSE, 2018d, p. 9,11,13).*

Improving energy access in the remote and rural areas of the country is essential for peacebuilding efforts. Environmental peacebuilding acknowledges that peace and ecological well-being are mutually reinforcing human aspirations. Peace advances environmental causes, while environmental stability enhances the prospects for peace. As described by Soroos, environmental peacebuilders can apply a range of tools to obtain their purposes, sustainable development policies and environmental laws among them (Soroos, 2004, p. 87, 89–91, 95,96). The main energy supply in the non-interconnected energy zones in Colombia is provided through diesel generators (Briscoe et al., 2016, p. 14). Whilst energy access and its continuity are vital to development in the areas most affected by the conflict, the importance of the sustainable character of its sources cannot be left out. This article reviews the Peace Agreement, and the subsequent legal and policy basis, on the role of renewable energy sources for improving energy access in Caquetá, evaluating their possible impact within a frame of environmental peacebuilding.

### Improving energy access by renewable sources in Caquetá: legal and policy basis

The Colombian energy supply system is divided into two zones, the National Interconnected System (SIN) zone and the Not Interconnected Zone (ZNI). The SIN covers 48% of the national territory and supplies energy to 96% of the population. The remaining 52% of Colombia's territory

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falls under the ZNI, where its inhabitants depend on off-grid energy solutions and electricity is primarily generated with diesel (Briscoe et al., 2016, p. 14). In order to improve energy access in these areas, the Peace Agreement calls for the establishment of a National Rural Electrification Plan (PNER).

The Peace Agreement stated the main premise of the PNER, focusing on the need for extension of electric coverage yet lacks guidelines regarding the sustainability of its sources (GOV FARC, 2016, p. 25). Deriving from the objectives of the Peace Agreement, Decree 884/2017 was established as a legal basis for the PNER. It states that for electric energy generation in the rural environments, non-conventional energy sources will be used preferably. These are defined by Law 1715/2014 as those energy resources that are environmentally sustainable, including nuclear energy as well as biomass, small hydroelectric, wind, geothermal and solar (Law 1715, 2014). Whilst the decree formulated a guideline for the PNER, it was no final obligation to commit to the use of non-fossil fuels in energy supply for the electrification of the rural areas in Colombia.

In referring to remote areas which are not connectable to the SIN, the PNER formulates the objective to implement energy solutions from non-conventional energy sources, or a hybrid of those with fossil energy sources (PNER, 2018, p. 37). Notably, Decree 884/2017 did not explicitly mention these hybrid energy systems, merely highlighting the preferred status of energy solutions from non-conventional energy sources.

The overall focus of the PNER in electrification efforts lies on the PDET municipalities. The PDET municipalities form a selection of 170 Colombian municipalities, defined in Decree 893/2017, that were affected the most by violence, poverty, presence of illicit crops and state absence (Gobierno de Colombia, 2019). All sixteen

municipalities of Caquetá were classified as PDET municipalities, requiring a specific focus of peacebuilding efforts. This classifies the whole department of Caquetá, following the argumentation of the PNER, as a focus of electrification efforts.

The sections dedicated to supplying energy to the ZNI formulate a general objective in plans to do so by renewable sources. Especially solar is mentioned as objective for individual household energy supply, provisioning a total installed capacity of 0,5 kWp per household (PNER, 2018, p.33). However, the PNER also mentions the continuation of hybrid energy systems, suggesting a continuation of energy generators that at least partially rely on fossil fuels. This does not only have environmental impacts, it is also accompanied by more practical issues in energy supply in Caquetá, as data from the Institute for Planning and Promoting Energy Solutions for the Non-Interconnected Zones in Colombia (IPSE) in the next section will show.

#### Energy access and environmental peacebuilding in Caquetá

The geographic aspects of the ZNI limit the economic and technical viability of telemetry systems in sending energy access data. As a result, only 5% of the ZNI in Colombia (only two localities in Caquetá) communicate their energy data through telemetry. In the most remote areas in Caquetá, data regarding their daily energy access is communicated by ‘energy informants’, selected people from the community, through telephone calls with a contact centre (IPSE, 2013, 2018a, p. 6).

Official data regarding energy access in Caquetá state a coverage of 87.88% (PNER, 2018, p. 33) Yet this percentage does not represent a constant and reliable access, as demonstrated in the table below. The table visualises energy access rates of localities without telemetry in Caquetá between October and December 2018. Considering the official categorisation of daily energy access - 1-6, 7-12, 13-18, 19-23 or 24 hours - by far the largest group of localities fall within the 1-6 hours group. This means that they have access to energy, and are categorized as such, yet on an unreliable basis and a mere 1-6 hours daily.

**Table 1: Overview IPSE Data for localities in Caquetá without telemetry from October – December 2018.**

	October 2018	November 2018	December 2018
Considered total number of localities in Caquetá	46	46	46
Localities without energy access	5	4	2
Localities and reason for lack of energy access	El Jordan, Santana Ramos, Cristo Rey and El Ruby: fuel deficit Araracuara: defect in hydroelectric plant	El Jordan, Santana Ramos, Cristo Rey and El Ruby: fuel deficit	El Jordan and Santana Ramos: fuel deficit
<b>Daily energy access</b>			
1-6 hours	39 localities	38 localities	40 localities
7-12 hours			
13-18 hours			
19-23 hours			
24 hours	2 localities	3 localities	3 localities
Localities that did not send information		1	1

Source: Author with data from IPSE (IPSE, 2018d, p. 11,13,15,16, 2018b, p. 11,13,15, 2018c, p. 11,13,15).

The table further demonstrates that those localities that had no energy access at all did so primarily because of lack of fuel. Dependence on diesel appears to be problematic especially for those localities that have encountered the problem repeatedly, El Jordan and Santana Ramos (both in the municipality of Puerto Rico). Diversification of energy sources, in a hybrid or completely renewable, could present a more sustainable approach to improving the access to energy in Caquetá.

The Peace Agreement, Decree 884/2017 and the PNER have laid out a legal and policy basis for increasing energy access in the ZNI and Caquetá, formulating at least the objective for diversification with renewable sources. Combined with the classification of all Caquetá municipalities as PDET, the increased electrification efforts could provide a solid basis for future sustainable development, especially considering the provisioned installed solar capacity of 0,5 kWp for individual household supply.

#### Outlook

Yet potentially, environmental peacebuilding and renewable energy projects could interconnect even further. A project in the FARC reincorporation territory of Miravalle in Caquetá could be an example. Funded by the Norwegian government, Caritas Norway, and the Social Pastoral Episcopal Conference of Colombia, a small hydroelectric energy plant has been constructed and

implemented in a community of former FARC combatants. It provides reliable energy access for the community and enough electricity to supply an aquaponic greenhouse where the former combatants now grow vegetables. An important aspect of this is the participation of the former FARC combatants, who constructed the plant themselves in the nearby city of Neiva (Calle, 2018; UNO, 2018).

It is important to differentiate between the efforts of the government, which have become visible through legal and policy decisions, and independently funded projects through national and transnational actors. Citizen participation through construction or maintenance of the Miravalle project could have effects that strengthen peacebuilding even more, yet this should be subject to further research. The areas without telemetry already involve elements of citizen participation through the assigned energy informants who communicate with the contact centres. Expanding the role of citizen participation in renewable energy supply could pose a method for environmental peacebuilding efforts, setting Caquetá as an example.

#### Concluding thoughts

The upcoming time is crucial, both to avoid a return to political violence and to transcend it permanently. The laws and policies discussed in this article aimed to increase access to electricity in the rural zones of Colombia. They formulated general objectives to do so with renewable energy resources, yet lack a clear commitment. Increasing access to energy by renewable sources could improve peacebuilding efforts in a sustainable matter, strengthening opportunities for local development in Caquetá. Further effects on peacebuilding could derive from intensified citizen participation, of which the project mentioned in the last section has given an indication. Concluding, the author argues that the key aspect in advancing living standards in Caquetá lies in supplying its inhabitants with energy and doing so by renewable sources is vital in order to promote development that is environmentally sustainable.

**The opinions expressed in this article are the author's own and do not reflect the view of the Freie Universität Berlin or Bernhard Daldrup, MdB.**

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*The views expressed in this Newsletter are strictly those of the authors and do not necessarily reflect those of the European Centre for Energy and Resource Security (EUCERS), its affiliates or King’s College London.*

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## ANNOUNCEMENTS

**Invitation: 1<sup>st</sup> EUCERS/KAS Energy Talk 2019:  
Assessing the impact of renewables on global de-  
carbonization efforts.**

**1 April 2019**, 14:00-16:00 followed by a reception  
♦ Council Room ♦ Strand Campus ♦  
King's College London ♦ WC2R 2LS

Dear EUCERS members,

We would like to cordially invite you to the first instalment of 2019's EUCERS/KAS Energy Talk Series.

It will take place on April 1, 2019, from 14-16:00 in the Council Room at King's College London Strand Campus and will be followed by a reception.

Please register by filling your name and affiliation under the following [link](https://goo.gl/forms/GAz988AetNCRJczI2) [https://goo.gl/forms/GAz988AetNCRJczI2] to attend. Due to King's College London Security, you have to be registered to enter the premises.

This panel discussion will assess the impact of renewables on global de-carbonisation efforts.

The confirmed programme is as follows:

14:00 Welcome and Introduction  
- **Professor Dr Friedbert Pflüger**, Director, EUCERS, King's College London  
- **Mr. Felix Dane**, Director UK & Ireland, Konrad Adenauer Foundation

Introductory statements by  
- **Peter Mather**, Group Regional President, Europe and Head of Country, UK BP  
- **Thomas Krupke**, CEO, Clere AG and former CEO of Solon SE  
- **Professor David Newbery**, Director of the Energy Policy Research Group, University of Cambridge  
- **Dr. Frank Umbach**, Research Director, EUCERS, King's College London

15:00 Discussion

15:50 Presentation of key findings of EUCERS-KAS Strategy Paper 18 by

**Dr. Simon Chin-Yee**, Konrad Adenauer Foundation Fellow 2017-18

*16:00 Reception*

For any further information, please contact Thomas Fröhlich (thomas.froehlich[at]kcl.ac.uk).

We thank you for your continued interest in the European Centre for Energy and Resource Security.

## EUCERS ON THE ROAD

18.02.2019 Brussels, Belgium	Frank gave a presentation and keynote speech on "Energy Security in a Digitalised World and its Geostrategic Implications" at the international workshop "Digitalization of Energy Systems: Experiences from Europe and Asia", Konrad-Adenauer-Foundation's (KAS) European Office.
06.02.2019 Washington, D.C., USA	Friedbert gave a lecture on European gas supply security at the Konrad Adenauer Foundation's Washington DC office.
14.02.2019 Munich, Germany	Friedbert organized and moderated a Special Energy Dialogue at the Reichstag roundtable at the Munich Security Conference (MSC). Focussing on oil, the title was " <i>The Power Game between US Production, Chinese Demand and the OPEC Alliance</i> "

## PUBLICATIONS

Fröhlich, Thomas "Why did Brazil's Ethanol Diplomacy fail?" In: FGV Boletim de Conjuntura Energética Nov 2018 p. 9. Now available online:  
<https://fgvenergia.fgv.br/opinioes/why-did-brazils-ethanol-diplomacy-fail>

Umbach, Frank "Nord Stream 2: Geopolitische Dimensionen der EU-Energiepolitik" (Nord Stream 2: Geopolitical Dimensions of EU-Energy Policy", in: Bulletin Außen- & Sicherheitspolitik. Magazin des Außen- und Sicherheitspolitischen Arbeitskreises der CSU 1/2019, S. 8-10  
(<https://www.csu.de/common/csu/content/csu/hauptnavigation/partei/parteiarbeit/asp/ASP-Bulletin/190218 ASP Bulletin Veroeffentlichung.pdf>).

— “Energy Security in the Digital Age and its Geopolitical Implications for Asia”, Panorama 2/2018 (ed. by Konrad-Adenauer-Foundation/KAS, Singapore), pp. 137-149.

— “The Global Battery Race: Europe’s Strategic Perspectives”, Geopolitical Intelligence Service (GIS), 19 February 2019, 9 pp.

(<https://www.gisreportsonline.com/the-global-battery-race-europes-strategic-perspectives,energy,2807,report.html>).

— “China’s Silk Road Strategy in Southeastern Europe”, European Security & Defence (ES&D) 2/2019, pp. 26-31 ([http://mittler-report.de/download/esd\\_02\\_2019/index.html](http://mittler-report.de/download/esd_02_2019/index.html)).

## IN THE MEDIA

Our Research Director, Frank Umbach, was interviewed about Europe’s rising gas demand and import dependence on Russia as well as global and European LNG-developments: Eduard Steiner, “Westeuropa im Griff der Russen”, Die Welt, 29 January 2019, S. 12 (also via <https://www.welt.de/wirtschaft/article187819534/Energiversorgung-Die-gefaehrliche-Abhaengigkeit-der-EU-von-Russland.html>).

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If you have found our Newsletter interesting, wish to hear more about our activities, or, indeed, contribute with ideas or essays, please contact Thomas Fröhlich, Newsletter Editor EUCERS on [thomas.froehlich@kcl.ac.uk](mailto:thomas.froehlich@kcl.ac.uk) or call 020-7848-1912.

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**Janusz Reiter**, Center for International Relations, Warsaw

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**Professor Jonathan Stern**, Chairman and Senior Research Fellow, Natural Gas Research Programme, Oxford Institute for Energy Studies

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