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a crise do mundo globalizado

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PARTE I – TEMA PRINCIPAL

Uma ambição nuclear (militar) da Turquia? (1)

[FONTE: Daily Sabah, 11/08/2017]

Turkey to expand capacity to meet energy needs with 3 nuclear power plants in action

by daily sabah

Striving to diversify energy supply channels as much as possible, Turkey plans to build three nuclear power plants between 2023 and 2030, which are expected to provide 10 percent of domestic electricity consumption, Energy Minister Albayrak said

Uma ambição nuclear (militar) da Turquia? (2)

[FONTE: World Nuclear Association, 1918-1921]

Nuclear Power in Turkey

(Updated March 2021)

- **Turkey has had plans for establishing nuclear power generation since 1970. Today, plans for nuclear power are a key aspect of the country's aim for economic growth.**
- **Recent developments have seen Russia take a leading role in offering to finance and build 4800 MWe of nuclear capacity.**
- **The country's first nuclear power plant, at Akkuyu, commenced construction in April 2018.**
- **A Franco-Japanese consortium was expected to build the second nuclear plant, at Sinop.**
- **China is in line to build the third plant, with US-derived technology.**
- **A small uranium mining project is planned.**

Operable Reactors	Reactors Under Construction	Reactors Shutdown
0	3	0
0 MWe	**3,342 MWe**	**0 MWe**

Electricity sector

Total generation (in 2018): 304.8 TWh

Generation mix: coal 113.2 TWh (37%); natural gas 92.5 TWh (30%); hydro 59.9 TWh (20%); wind 19.9 TWh (6.5%); solar 7.8 TWh (2.6%); geothermal 7.4 TWh (2.4%); biofuels & waste 2.7 TWh.

Import/export balance: 2.5 TWh import, 3.1 TWh export

Total consumption: 255 TWh

Per capita consumption: c. 3100 kWh in 2018

Source: International Energy Agency and The World Bank. Data for year 2018.

Uma ambição nuclear (militar) da Turquia? (3)

[FONTE: DW, 3/04/2018]

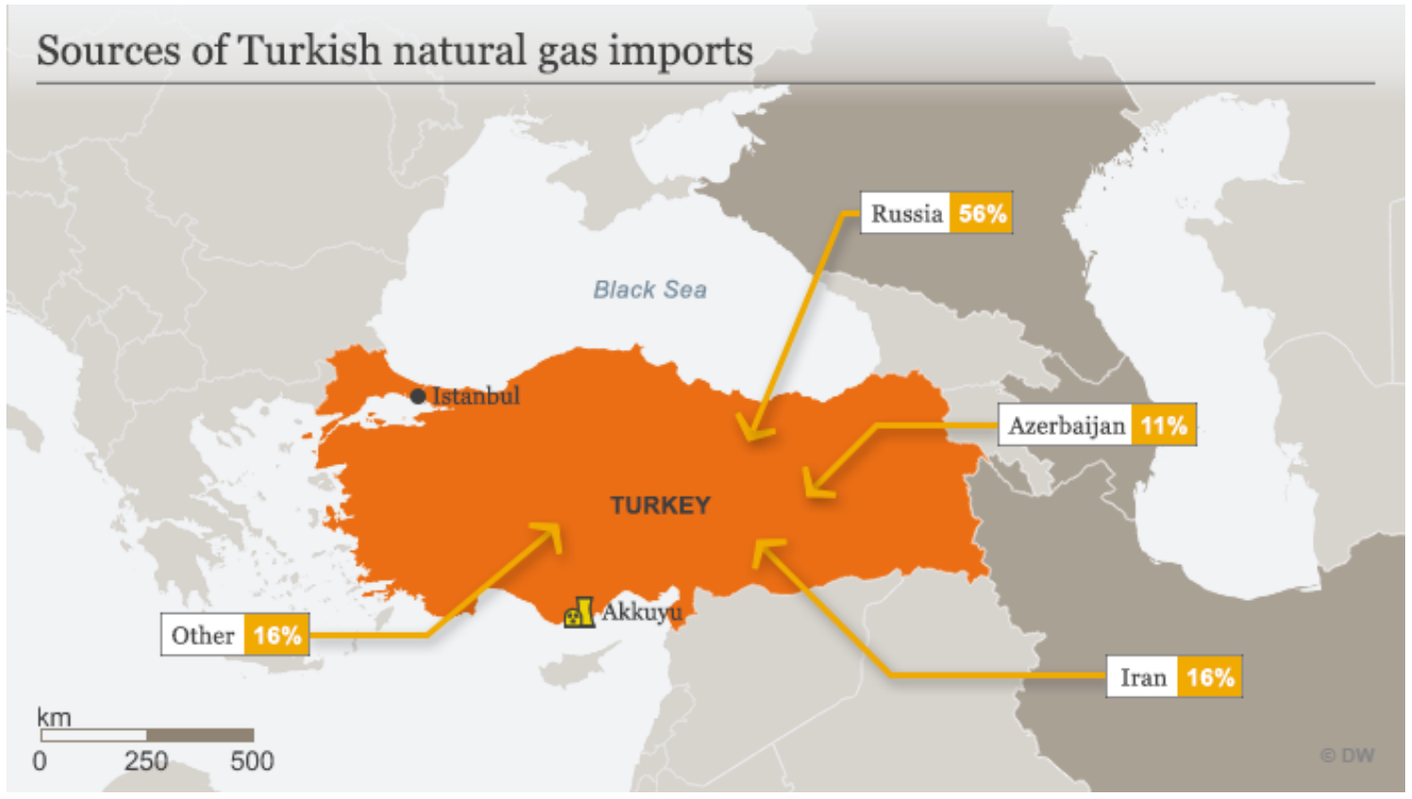
Akkuyu nuclear plant: Turkey and Russia's atomic connection

There has been talk of building a nuclear power plant on Turkey's Mediterranean coast since the 1970s. Now a Russian-backed project to do so is underway, but experts are skeptical of many aspects of the project.

Via video from Ankara, the presidents of Russia and Turkey, Vladimir Putin and Recep Tayyip Erdogan, kicked off construction of Turkey's first nuclear power plant. The Akkuyu power plant in the Mediterranean coastal province of Mersin is a Turkish-Russian venture expected to cost $20 billion and meet 10 percent of Turkey's energy needs. Yet experts say it remains unclear when it would really come online: Neither the required technology transfer from Russia nor a construction completion date has been set.

Uma ambição nuclear (militar) da Turquia? (4)

[FONTE: DW, 3/04/2018]



The Turkish government wants to reduce its natural gas consumption for electricity production to below 30 percent. However, the Akkuyu nuclear power plant would be able to at most take over 7.7 percent of electricity production by 2026, Varol says. "I'm not against safe atomic energy using the most modern technology. But such a project should happen within a developed or at least developing democracy so there is the possibility for and the freedom to have critical feedback," she added.

A nuclear power plant project in a country whose media cannot be critical and commercial bids lack transparency does "more harm than good," she said.

Uma ambição nuclear (militar) da Turquia? (5)

[FONTE: DW, 3/04/2018]

The project's progress is being seen as a bellwether for Turkish-Russian relations, including the technology transfer from Russia. No country should proceed with building a nuclear power plant, says atomic expert Sarman Gencay, without being fully briefed on atomic technology. Gencay, a professor at Istanbul Technical University, said the nuclear deal between Russia and Turkey does not guarantee the transfer. "The project's future is in the hands of our Russian friends, who have all the knowledge," he said. "Hopefully there will be no mishap. Because when a nuclear energy project comes to a halt, it is always the contracting country left with the bill."

Russia's Novovoronezh nuclear power station, although originally built in the 1960s, has undergone extensive renovations in the last two decades and is considered a sister project to the Akkuyu plant

Uma ambição nuclear (militar) da Turquia? (6)

[FONTE: UNODA]

United Nations | Office for Disarmament Affairs

UNODA Treaties Database Home

Turkey: Ratification of Treaty on the Non-Proliferation of Nuclear Weapons (NPT)

State	Turkey
Treaty	Treaty on the Non-Proliferation of Nuclear Weapons (NPT)
Action type	Ratification
Depositary	Government of the United Kingdom
Date	17 April 1980
Note	"In voting in favour of the Treaty on 12 June 1968 at the 22nd Session of the United Nations General Assembly and in signing the Treaty on 28 January 1969, the Turkish Government indicated its intention for eventual ratification. The Turkish Government is convinced that the Treaty is the most important multilateral arms control agreement yet concluded. By reducing the danger of a nuclear war, it greatly contributes to the process of detente, international security and disarmament. Turkey believes that her adherence would further the universality of the Treaty and strengthen international nuclear non-proliferation system. It is, however, evident that cessation of the continuing arms race and preventing war technology from reaching dangerous dimensions for the whole of mankind can only be realised through the conclusion of a treaty on general and complete disarmament under strict and effective international control. Furthermore, Turkey would like to underline the non-proliferation obligations of the nuclear-weapon states under relevant paragraphs of the preamble and Article VI of the Treaty. Proliferation of all kinds must be halted and measures must be taken to meet adequately the security requirements of non-nuclear-weapon states. Continuing absence of such assurances might have consequences that could undermine the objectives and the provisions of the Treaty. Having included nuclear energy in its development plan as one of the sources of electricity production, Turkey is prepared, as stipulated in Article IV of the Treaty, to cooperate further with the technologically advanced states, on a non-discriminatory basis, in the field of nuclear research and development as well as in nuclear energy production. Measures developed or to be developed at national and international levels to ensure the non-proliferation of nuclear weapons should in no case restrict the non-nuclear weapon states in their options for the application of nuclear energy for peaceful purposes."
Other Actions	Signature on deposit with London - 28 January 1969 Ratification on deposit with Moscow - 17 April 1980 Signature on deposit with Moscow - 28 January 1969 Ratification on deposit with Washington - 17 April 1980 Signature on deposit with Washington - 28 January 1969

Uma ambição nuclear (militar) da Turquia? (7)

[FONTE: Arms Control, October 2019]

Turkey Shows Nuclear Weapons Interest

ARMS CONTROL TODAY

October 2019
By Shannon Bugos

Complaining that nuclear-armed nations retain an unacceptable monopoly on nuclear weapons, Turkish President Recep Tayyip Erdogan used a recent Turkish holiday to seemingly suggest that his nation acquire its own nuclear arsenal.

"Several countries have missiles with nuclear warheads, not one or two. But [they tell us that] we can't have them. This I cannot accept," Erdogan said on the centennial of the Turkish independence movement. "There is no developed nation in the world that doesn't have them."

Turkish President Recep Tayyip Erdogan speaks at the UN General Assembly on Sept. 24, 2019. Earlier in the month, he suggested that Turkey may be interested in acquiring nuclear weapons. (Photo by Stephanie Keith/Getty Images)

In fact, many developed countries do not have nuclear weapons. Only nine countries—the United States, Russia, the United Kingdom, France, China, India, Pakistan, North Korea, and Israel—possess nuclear weapons, with Washington and Moscow owning 93 percent of them.

In a comment to *The National Interest*, a U.S. State Department official reminded Turkey that it is a party to the 1968 nuclear Nonproliferation Treaty (NPT) and emphasized the "great importance of Turkey's continued adherence to its obligations under the treaty."

Turkey signed the NPT as a non-nuclear-weapon state in 1980, meaning that Ankara agreed to forgo developing or acquiring nuclear weapons. Turkey has also signed the 1996 Comprehensive Test Ban Treaty, which bans all nuclear test explosions.

Uma ambição nuclear (militar) da Turquia? (8)

[FONTE: Arms Control, October 2019]

As the State Department also pointed out, Turkey is "covered by NATO's Article 5 collective defense clause, which bolsters Turkey's defense and security."

Nevertheless, Erdogan once again hinted at Turkey's potential pursuit of nuclear weapons during his speech at the UN General Assembly on Sept. 24, saying "the position of nuclear power should either be forbidden for all or permissible for everyone."

Erdogan's comments come as Ankara began in July to receive shipments of the S-400 Russian missile defense system. Turkey and Russia signed the S-400 deal, worth $2.5 billion, in December 2017. The United States has opposed it, citing concerns that Russia might use the system to gather intelligence about advanced fighter jets that Turkey purchased from the United States but has not received.

After the initial delivery of the S-400 system to Turkey, the Trump administration decided on July 17 to remove Ankara from the next-generation F-35 Joint Strike Fighter program, canceling the shipment of more than 100 F-35s and causing Turkey to lose its production work on the jet. On Sept. 4, the Turkish Ministry of National Defense said that it had moved ahead with the training of their air force personnel to operate the S-400 system in Gatchina, Russia. The ministry said on Sept. 15 that the delivery of a second battery of the system has been completed and that the S-400 missiles would become active in April 2020.

Erdogan's remarks may have been more an expression of desire to build its status as a world power than an actual goal, according to some analysts.

"The Turkish president was not actually signaling an imminent decision to develop nuclear weapons," wrote Aaron Stein, director of the Middle East Program at the Foreign Policy Research Institute. Instead, Stein says, Erdogan is arguing that the West has failed to treat Turkey equally and, in order "to right the wrong," demanding a seat at the table.

Uma ambição nuclear (militar) da Turquia? (9)

[FONTE: Öznur Küçüker Sirene / TRT, 12/09/2019]

La Turquie devrait-elle détenir l'arme nucléaire ? Il est indéniable que la prolifération nucléaire représente un danger mondial mais en même temps la possession de l'arme nucléaire ne paraît-elle pas comme la condition sine qua non pour devenir une réelle puissance mondiale, comme le prouvent les cinq Etats membres du Conseil de Sécurité de l'ONU ?

Uma ambição nuclear (militar) da Turquia? (10)

[FONTE: Öznur Küçüker Sirene / TRT, 12/09/2019]

Le président turc Recep Tayyip Erdoğan a récemment déclaré dans la province de Sivas dans l'est de la Turquie : *« Certains (pays) possèdent des missiles avec des têtes nucléaires mais je ne devrais pas en avoir. Je n'accepte pas cela »,* a-t-il déclaré, avant de souligner qu'Israël disposait d'un tel arsenal.

Rappelons que la Turquie a rejoint le Traité de non-prolifération nucléaire [TNP] en 1980. Ce qui signifie qu'elle ne peut pas mener un programme nucléaire à vocation militaire, sauf à s'en retirer.

Par ailleurs, au sein de l'OTAN, dont Ankara est membre depuis 1952, seuls trois membres sont dotés de l'arme nucléaire : les États-Unis, la France et le Royaume-Uni.

Dans le monde, un total de neuf Etats sont dotés de l'arme nucléaire : les Etats-Unis, la Russie, le Royaume-Uni, la France, la Chine, l'Inde, le Pakistan, Israël et la Corée du Nord.

La Turquie mène, néanmoins, un programme nucléaire pour répondre à ses besoins énergétiques tous les jours un peu plus importants dans le cadre de deux projets : la centrale nucléaire d'Akkuyu lancée avec le géant russe Rosatom et une autre centrale à Sinop lancée par un consortium franco-japonais.

Nous verrons en quoi la possession de l'arme nucléaire par la Turquie peut contribuer à ses objectifs en matière de la défense et comment différents pays réagissent face à une telle éventualité.

Uma ambição nuclear (militar) da Turquia? (11)

[FONTE: Öznur Küçüker Sirene / TRT, 12/09/2019]

L'industrie de la défense en pleine croissance en Turquie

Ce n'est pas un secret : la Turquie mise beaucoup sur le développement de son industrie de la défense. Si on peut expliquer cette ambition par la volonté du pays d'atteindre les objectifs économiques de 2023, on peut également la lier à son envie d'accroître les mesures de sécurité dans une région incertaine. Avec des voisins ravagés par des guerres et conflits comme la Syrie et l'Irak, les menaces terroristes du PKK, de FETÖ et de Daech mais aussi les intimidations incessantes des puissances mondiales comme les Etats-Unis, la Turquie n'est jamais à l'abri du danger.

C'est ainsi que les productions nationales mais aussi les exportations des entreprises en activité dans l'industrie de défense et de l'aéronautique sont en pleine croissance. Lors de la cérémonie de remise de diplômes de l'Université de la Défense nationale, le Président Erdoğan a ainsi déclaré en juillet : *« Le taux de notre dépendance à l'étranger dans l'industrie de la défense était d'environ 80% il y a 17 ans. C'est-à-dire nous pourrions produire, nous-mêmes, seulement 20% des produits de l'industrie de la défense dont nous avions besoin. Nous avons élevé le taux de la production nationale dans l'industrie de la défense à d'environ 70% en surmontant de gros obstacles, problèmes et sabotages. »*

Si la Turquie devient peu à peu un pays phare de l'industrie de la défense en ajoutant de la plus-value à l'OTAN, elle renforce également ses capacités militaires par l'acquisition des systèmes les plus évolués au monde. L'exemple le plus récent est l'achat des systèmes de missiles russes S-400 en dépit des pressions américaines.

Uma ambição nuclear (militar) da Turquia? (12)

[FONTE: Öznur Küçüker Sirene / TRT, 12/09/2019]

La dissuasion nucléaire : une arme politique redoutable

Malgré le progrès fulgurant de la Turquie dans le domaine de la défense, il ne faut pas se voiler la face : la meilleure arme de dissuasion politique reste encore et toujours l'arme nucléaire dans les relations internationales. Si la prolifération nucléaire accroîtrait inévitablement l'insécurité mondiale, sa possession confère aussi à un Etat de la puissance, du prestige et une position dominante. C'est d'ailleurs pour cette raison que les cinq membres permanents du Conseil de Sécurité de l'ONU (Chine, États-Unis, Russie, France et Royaume-Uni) sont les cinq États nucléaires officiels.

Dans le cas de l'Iran, d'Israël et de la Corée du Nord, nous assistons régulièrement à des débats au sujet du développement et de l'utilisation

des armes nucléaires. L'éventualité de la production d'une bombe nucléaire par l'Iran est une source d'inquiétude perpétuelle pour Israël mais aussi les Etats-Unis. C'est aussi paradoxalement une sorte de protection et une carte fréquemment exploitée par les autorités iraniennes pour dissuader les ennemis. L'exemple de la Corée du Nord est également un parfait exemple de dissuasion nucléaire qui montre que quelle que soit la taille des pays qui détiennent l'arme nucléaire, cela reste un formidable égalisateur de puissance du faible au fort. C'est ainsi que devant le risque d'utilisation de l'arme nucléaire par Kim Jong-un, le président des Etats-Unis, première puissance mondiale, a accepté de dialoguer avec le leader nord-coréen.

Uma ambição nuclear (militar) da Turquia? (13)

[FONTE: Al Jazeera, 10/03/2021]

Turkey's nuclear power dilemma

Turkey's first Russia-backed nuclear plant has raised issues around its safety and potential for use in building nuclear weapons.

Sinem Koseoglu 10 Mar 2021

Russian President Vladimir Putin and his Turkish counterpart Recep Tayyip Erdogan attend a groundbreaking ceremony of the Akkuyu nuclear power plant in 2018 [Mikhail Klimentyev/Kremlin via Reuters]

Istanbul, Turkey – Turkish and Russian officials laid the foundation for the third reactor of Turkey's first nuclear power plant Akkuyu in the southern coastal city of Mersin on Wednesday.

The plant's first reactor unit is expected to be operational in 2023, the centenary of the Turkish Republic, and the remaining units in 2026.

Uma ambição nuclear (militar) da Turquia? (14)

[FONTE: Al Jazeera, 10/03/2021]

The co-construction of the Akkuyu plant started in April 2018, eight years after the two countries signed an intergovernmental agreement.

The project is owned by the Russian energy company Rosatom while the Turkish Akkuyu is the license owner and the local operator.

Once completed, the plant is expected to produce 35 billion kilowatt-hours (kWh) of electricity annually, about 10 percent of Turkey's total electricity supply. The service life will last 50 years.

The facility will launch Turkey into the "league of nuclear energy countries", President Recep Tayyip Erdogan said, hailing it as a "symbol of Turkish-Russian cooperation".

Russian President Vladimir Putin, who spoke at the event via video-conference from Moscow, called it a "truly flagship project".

Akkuyu is the only nuclear power facility under construction in Turkey but a second project in the Black Sea province of Sinop is expected to kick off this year, reports suggest, if Ankara can find a new partner after Japan's Mitsubishi pulled out last year.

The project was agreed on by the Japanese and Turkish governments in 2013. A consortium led by Mitsubishi Heavy Industries conducted a feasibility study until March for the construction of a 4,500-megawatt plant in Sinop.

A senior energy official, speaking on condition of anonymity, told Al Jazeera the Turkish government is also considering a third nuclear plant with four reactors in the country's northwest. Turkey's ultimate goal is not building a nuclear weapon but diversity in energy resources, he said.

Uma ambição nuclear (militar) da Turquia? (15)

[FONTE: Al Jazeera, 10/03/2021]

Atomic weapon suspicions

Despite Turkey's claims the plant will only be used to diversify energy resources, some have suggested Ankara may have plans to enrich uranium.

Turkey and nuclear-armed Pakistan have long had military cooperation agreements that were recently intensified, with some news reports suggesting Islamabad may be covertly supporting a nuclear weapons programme.

Military cooperation deals have been signed earlier this year with Kazakhstan, a country providing at least 35 percent of the world's uranium.

Asked about possible nuclear cooperation with Pakistan, the senior energy official in Ankara said during meetings in Vienna there have been talks about possible cooperation on peaceful use, under IAEA control, especially in radiation technologies and cancer treatment.

Turkey is a party to all international nonproliferation instruments and export control regimes, including the Treaty on Non-Proliferation of Nuclear Weapons, Comprehensive Test Ban Treaty (CTBT), Chemical Weapons Convention (CWC), and Biological Weapons Convention (BWC).

Turkey is also among the signatories of the binding International Code of Conduct against the proliferation of ballistic missiles and other anti-weapons pledges.

Uma ambição nuclear (militar) da Turquia? (16)

[FONTE: Bulletin of the Atomic Scientists, 7/07/2020]

Bulletin of the Atomic Scientists
75 years and counting

Conventional wisdom says Turkey won't go nuclear. That might be wrong.

By John Spacapan | July 7, 2020

Ask 10 experts on Turkish politics whether the United States should worry about Ankara's nuclear weapons ambitions and you'll likely hear 10 denials. Get beyond the Washington Beltway and you'll get something different. The Israelis worry Turkish President Recep Tayyip Erdogan is getting all too close to a nuclear-armed Pakistan that likes to share nuclear technology. Turkish environmentalists spotlight that Erdogan's uneconomic and unnecessary nuclear power program may pose proliferation risks. The Greeks whisper about Erdogan's nuclear bomb

Uma ambição nuclear (militar) da Turquia? (17)

[FONTE: Bulletin of the Atomic Scientists, 7/07/2020]

Bulletin of the Atomic Scientists
75 years and counting

There are popular reasons to think Turkey won't acquire nuclear weapons. It's in NATO and already has 50 American B61 nuclear bombs at a joint US–Turkish airbase. It also forswore acquiring its own nuclear weapons, is party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), and has ratified the Comprehensive Nuclear Test Ban Treaty. So, what suggests Turkey may want to go nuclear in the not too distant future? Three things.

First, President Erdogan says he wants the bomb. Last fall, he complained before the UN General Assembly that the NPT bars states like Turkey from developing nuclear weapons but ignores that other states have them. Earlier, he told members of his Justice and Development Party that "some countries have missiles with nuclear warheads, not one or two. But [they tell us] we can't have them. This, I cannot accept." He then said nuclear weapons are an enormous source of power for Israel.

Second, Erdogan is often bombastic, but on nuclear energy he's taking action. Along Turkey's Mediterranean coastline, the Russians are building four large civilian nuclear power reactors at the Akkuyu Nuclear Facility. Erdogan hopes the Russians will complete the first reactor by 2023, in time for the centenary celebrations of the founding of modern Turkey. Ankara says it needs nuclear energy to decrease its dependence on natural gas imports from unreliable partners—Russia and Iran—and to meet electricity demand. This demand has grown at the highest rate of all OECD countries since 2005.

Uma ambição nuclear (militar) da Turquia? (18)

[FONTE: Bulletin of the Atomic Scientists, 7/07/2020]

Bulletin of the Atomic Scientists
75 years and counting

Actually, the Akkuyu plant is a bad investment. While Rosatom, Russia's state-owned nuclear energy corporation, is footing the bill for the first reactor, it will not do the same for Akkuyu's other three reactors. Despite years of searching, the Russians haven't found a single private investor for the project. To finish Akkuyu, the Turkish government will have to finance it through public debt or secure increasingly scarce foreign investment.

If President Erdogan were paying attention to the market, he would know that natural gas and renewables beat nuclear. Even before the pandemic, Turkey was importing natural gas for a fraction of the Akkuyu plant's market electricity price—an uneconomic 12.35 cents per kilowatt hour. And Turkish access to gas will soon expand; by backing the interim government in Libya that enjoys UN support, Turkey scored cheap gas and drilling rights in Libya's maritime zone.

More natural gas will allow Turkey to meet electricity demand today. Cheap domestic renewables should help it tomorrow. As it stands, 10 percent of Turkish electricity comes from solar and wind. One of Turkey's top universities recently reported that these sources could meet 30 percent of Turkey's electricity demand by 2026, given proper investment. An objective observer must wonder why bad economics hasn't dampened Erdogan's nuclear ambitions.

What's worrisome is Turkey could exploit nuclear power as a cover to procure bomb-related technology and hardware. The technology transfer is already occurring. Since the Akkuyu project began, Turkish engineering students have become the second largest national group studying nuclear sciences in Russia, where hundreds of Iranian and North Korean scientists came before them. While Russia was building Iran's civilian power facility at Bushehr, side agreements led to the transfer of equipment and exchange of scientists, which assisted Iran's weapons program at other sites. These actions fooled US intelligence (who believed Iran had stopped its weapons program between 2003 and 2007) and international inspectors.

Uma ambição nuclear (militar) da Turquia? (19)

[FONTE: Bulletin of the Atomic Scientists, 7/07/2020]

Bulletin of the Atomic Scientists
75 years and counting

Just two years ago, Turkey won its largest defense contract ever—a multibillion-dollar contract to build four large naval vessels for the Pakistani Navy. In addition, a Turkish firm is constructing Pakistan's largest domestically built warship in Karachi. Turkey also is upgrading Pakistan's submarines, selling it Turkish-built attack helicopters, and maintaining its F-16s. Overall, only China is a bigger supplier to Pakistan's military. Erdogan's current clout in Islamabad exceeds that of North Korea, Iran, and Libya, all of which received nuclear bomb help from Pakistan.

All of this ought to make Washington uneasy. Since nuclear power provides much of the technology for bomb making, and in Turkey's case makes little economic sense, the United States should be trying to steer Turkey away from nuclear energy. Because Turkey needs foreign investment generally and especially in the energy sector, the US Development Finance Corporation ought to set a standard for regional development banks by incentivizing American companies to pursue Turkish renewables and natural gas related projects, as well as grid management assistance. The Chinese are already doing it; the United States should too.

This will not be enough, though. In addition, the United States and NATO still need to persuade Turkey that its security interests are better served in NATO than out. That's an even bigger problem, but it will need to be tackled too.

Uma ambição nuclear (militar) da Turquia? (20)

[FONTE: Réseau Sortir du Nucléaire, 2019]

Turquie projets nucléaires civils, un tremplin pour l'arme nucléaire

En juin 2018, le président Tayyip Erdogan et son parti pro-islamique, AKP, ont remporté les élections législatives. Désormais investi d'un pouvoir exécutif-présidentiel infini, associé à un contrôle complet des branches militaire, judiciaire et législative, Erdogan poursuit son ambition de devenir le leader de la puissance nucléaire dans le monde islamique sunnite.

Le négationnisme scientifique et la science de l'environnement ont atteint un nouveau niveau de folie en Turquie, où toute démocratie environnementale est supprimée. Le nouveau gouvernement mettra en œuvre ses doctrines politiques anti-scientifiques dans lesquelles la logique est un ennemi et la vérité scientifique, une menace. Ainsi, selon la nouvelle législation sur la réglementation nucléaire, pratiquement tous les aspects du programme nucléaire turc deviendront un secret d'État sous le contrôle d'un dirigeant motivé par la religion.

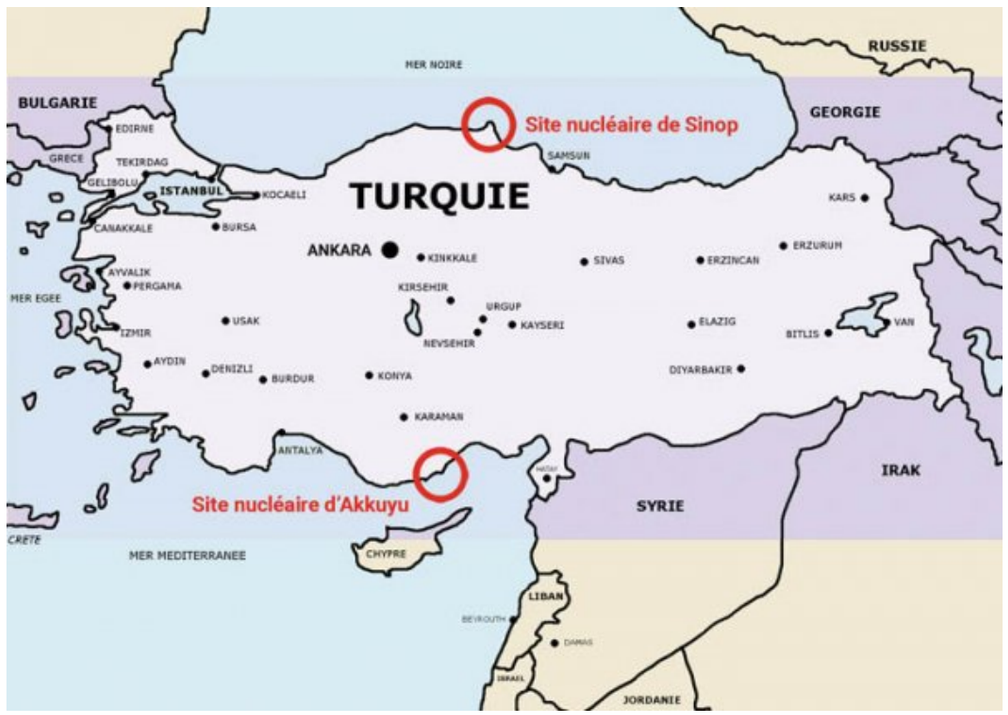
En juillet 2010, Erdogan a conclu un accord avec la Russie prévoyant le transfert de la technologie nucléaire à la Turquie. Un contrat de 20 milliards de dollars a été signé avec la société russe Rosatom pour la construction d'une centrale nucléaire et d'un complexe de fabrication de combustible sur le site d'Akkuyu-Mersin, situé sur la côte est de la Méditerranée. La société russe y développe une centrale de 4 800 MW, composée de quatre réacteurs VVER-1200, suivant un modèle BOO (Build Own Operate) incluant conception, construction, exploitation, maintenance, démantèlement. Le site de la centrale d'Akkuyu est proche du delta du Göksu, protégé par la Convention de Ramsar [1] .

Uma ambição nuclear (militar) da Turquia? (21)

[FONTE: Réseau Sortir du Nucléaire, 2019]

Une troisième centrale est actuellement en projet à Inceburun-Igneada, à environ 150 km à l'ouest d'Istanbul et à seulement 10 km de la frontière bulgare. Cette centrale serait, comme celle de Sinop, construite dans un territoire protégé par la Convention de Ramsar et la Convention de Bucarest.

Une fois achevés, les sites nucléaires d'Akkuyu et de Sinop seraient les seuls complexes nucléaires au monde sous le contrôle d'un exploitant, filiale d'un État étranger. De plus, les accords incluraient plusieurs clauses permettant au gouvernement turc d'extraire du plutonium du combustible irradié et d'enrichir de l'uranium. La Turquie se lance donc dans une technologie liée aux armes nucléaires. Il est certain que ces projets ont une motivation géopolitique et constituent un terrain fertile pour les programmes d'armes nucléaires à peine déguisés en accords de transfert de technologie.



Uma ambição nuclear (militar) da Turquia? (22)

[FONTE: Hindustan Times, 9/04/2021]

Pak aiding Turkey's nuclear ambitions and assert control over Kabul: Report

Pakistan's General Nadeem Raza and Turkey's General Yasar Guler met and discussed collaborations on several military projects and existing geopolitical issues last month.

A Pakistani-made Shaheen-III missile, that is capable of carrying nuclear warheads, is carried on a trailer during a military parade in connection with Pakistan National Day celebrations, in Islamabad, Pakistan. (AP)

Pakistan's General Nadeem Raza and Turkey's General Yasar Guler met and discussed collaborations on several military projects and existing geopolitical issues last month.

Pakistan is helping Turkey to develop nuclear weapons and control Afghanistan by expanding Recep Tyyip Erdogan's Caliphate expedition to the country.

Uma ambição nuclear (militar) da Turquia? (23)

[FONTE: Hindustan Times, 9/04/2021]

This could also lead to the emergence of a new pattern wherein terrorists from Pakistani outfits as well as those from the Islamic State could operate together.

Besides assisting Turkey in its ambitious Afghanistan plan, another motive behind the visit was to fast-track the inclusion of Turkey as a part of the China-Pakistan Economic Corridor (CPEC) and accelerate building an alliance between the three.

Greek City Times also reported that Pakistan is coordinating with Turkey and China for collaboration on developing a fifth-generation fighter aircraft.

The idea is to bring the expertise and capabilities of the three countries together for mutually developing aerial vehicles and fighter jets.

Pakistani Army sees a massive potential in convergence of Turkish expertise on drones and Chinese expertise on fighter jets to boost the air power of the three countries.

The emergence of a China-Pakistan-Turkey nexus on nuclear proliferation and Pakistan coordinating on capacity building of the three countries have already been flagged by watchdogs and media.

Erdogan has already expressed his desperation on developing the 'Caliphate atom bomb' to fulfil his neo-Ottoman aspirations, and China and Pakistan have been facing charges of illegal sale of missiles and creating a clandestine proliferation market, reported Greek City Times.

Uma ambição nuclear (militar) da Turquia? (24)

[FONTE: Federation of American Scientists, 16/10/2019]

Urgent: Move US Nuclear Weapons Out Of Turkey

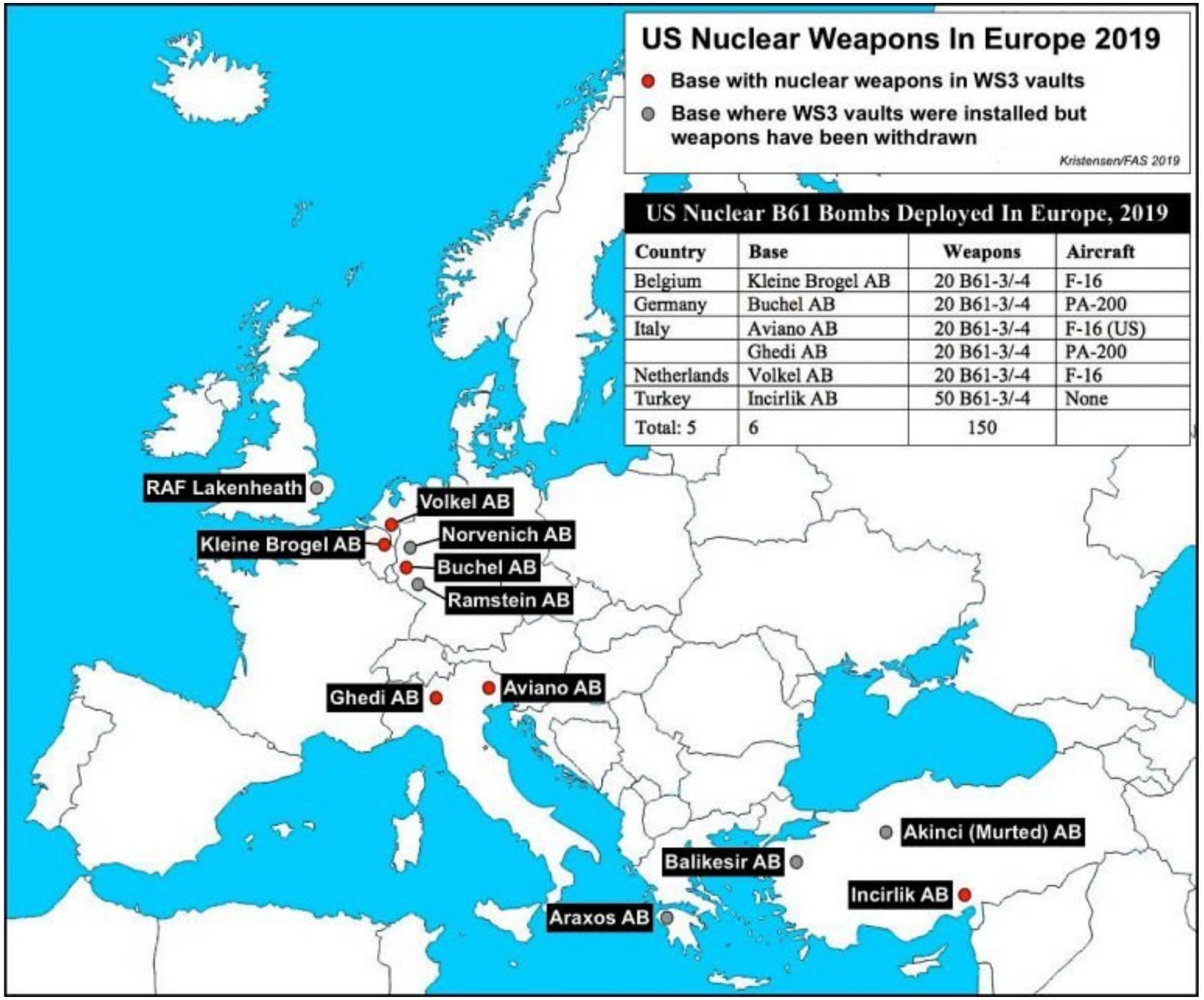
Hans Kristensen

Should the U.S. Air Force withdraw the roughly 50 B61 nuclear bombs it stores at the Incirlik Air Base in Turkey? The question has come to a head after Turkey's invasion of Syria, Erdogan's increasingly authoritarian leadership and deepening discord with NATO, Trump's inability to manage U.S. security interests in Europe and the Middle East, and war-torn Syria only a few hundred miles from the largest U.S. nuclear weapons storage site in Europe.

According to *The New York Times*, State and Energy Department (?) officials last weekend quietly reviewed plans for evacuating the weapons from Incirlik. "Those weapons, one senior official said, were now essentially Erdogan's hostages. To fly them out of Incirlik would be to mark the de facto end of the Turkish-American alliance. To keep them there, though, is to perpetuate a nuclear vulnerability that should have been eliminated years ago."

Uma ambição nuclear (militar) da Turquia? (25)

[FONTE: Federation of American Scientists, 16/10/2019]

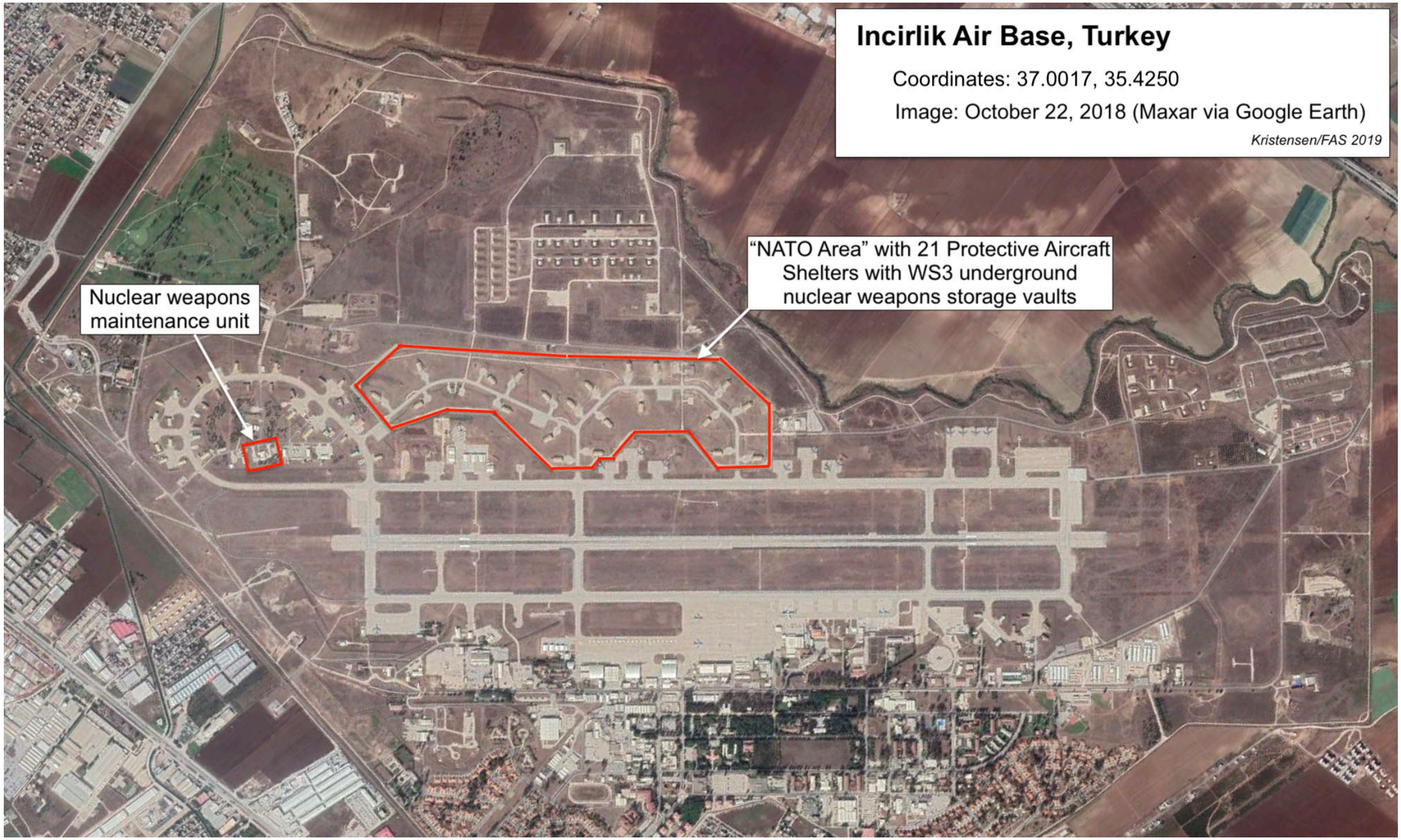


US Nuclear B61 Bombs Deployed In Europe, 2019

Country	Base	Weapons	Aircraft
Belgium	Kleine Brogel AB	20 B61-3/-4	F-16
Germany	Buchel AB	20 B61-3/-4	PA-200
Italy	Aviano AB	20 B61-3/-4	F-16 (US)
	Ghedi AB	20 B61-3/-4	PA-200
Netherlands	Volkel AB	20 B61-3/-4	F-16
Turkey	Incirlik AB	50 B61-3/-4	None
Total: 5	6	150	

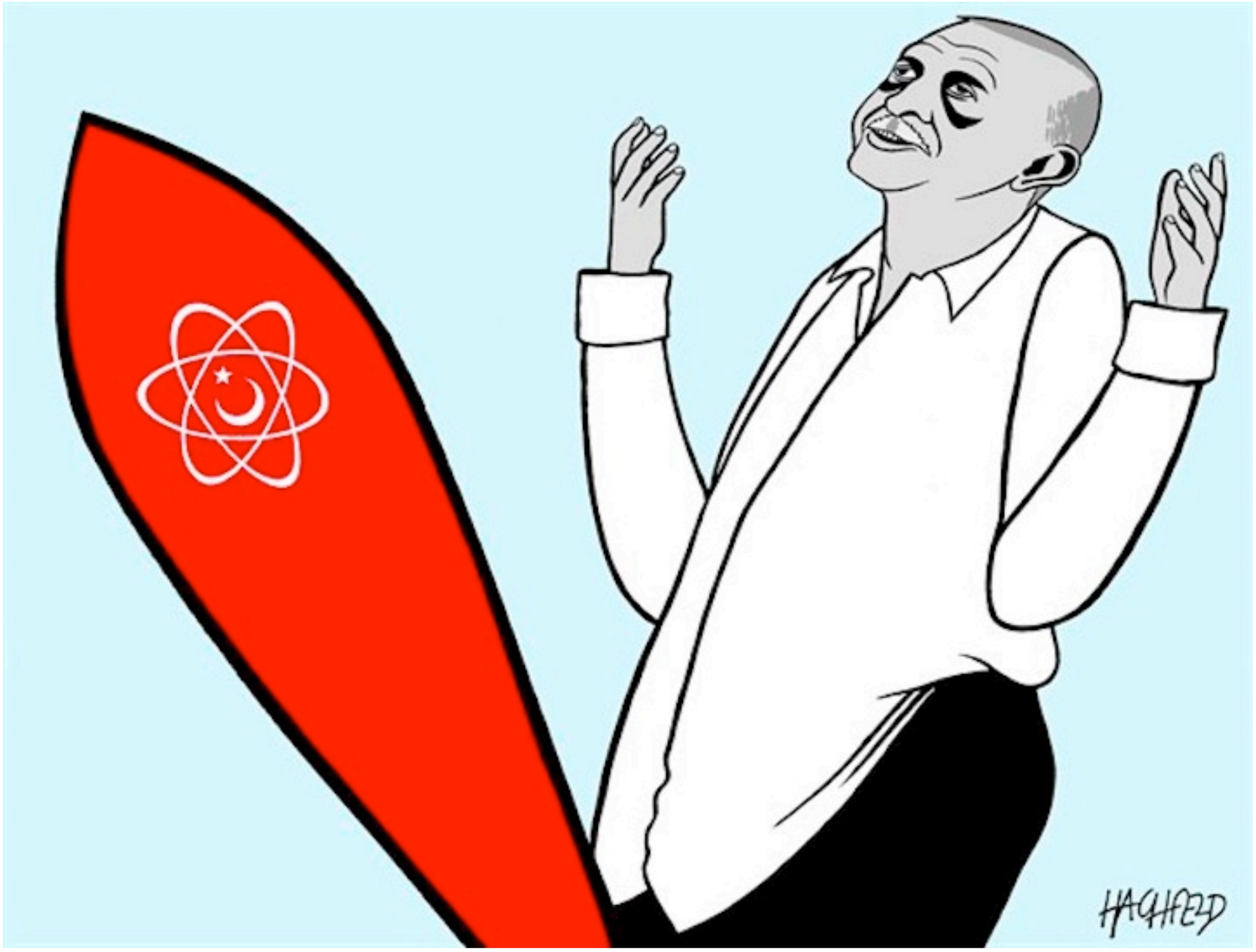
Uma ambição nuclear (militar) da Turquia? (26)

[FONTE: Federation of American Scientists, 16/10/2019]



Uma ambição nuclear (militar) da Turquia? (27)

[FONTE: cartoon de Cartoon de Rainer Hachfeld]



PARTE II – NOTAS BREVES

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (1)

[FONTE:CNN, 8/06/2021]

apps around the world go dark


By Jordan Valinsky and David Goldman, CNN Business

Updated 1215 GMT (2015 HKT) June 8, 2021

New York (CNN Business) – Countless websites and apps around the world went down for about an hour Tuesday after Fastly, a major content delivery network, reported a widespread failure.

Fastly supports news sites and apps like CNN, the Guardian, the New York Times and many others. It also provides content delivery for Twitch, Pinterest, HBO Max, Hulu, Reddit, Spotify and other services.

Other major internet platforms and sites including Amazon, Target, and the UK government website — Gov.uk — were affected.

The problem was caused by an outage at Fastly (FSLY), a cloud service provider. The company said on its service status website (which was working) Tuesday morning it had identified the problem and fixed the issue. Service for sites and apps started to be restored a little after 7 a.m. ET, although Fastly said some customers may experience longer load times as a residual effect of the outage.

The outage affected dozens of countries across the Americas, Europe and Asia, as well as South Africa. Fastly said it had identified a service configuration that triggered disruptions across its servers around the world. The company has disabled that configuration.

Fastly helps improve load times for websites and provides other services to internet sites, apps and platforms — including a large global server network designed to smooth out traffic overloads that can bring down websites, such as a denial-of-service attack. But because Fastly provides a layer of support between internet companies and customers trying to access news sites, social media and other online platforms, when it goes down, access to those services can be blocked entirely.

Companies that operate on the internet can switch content delivery networks — and some appeared able to bypass Fastly's outage Tuesday morning. But that's not always an easy or quick proposition.

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (2)

[FONTE: FT, 8/06/2021]

Cloud glitch brings down thousands of websites

Silicon Valley-based content delivery network Fastly suffers outage

June 8 2021

Internet infrastructure provider Fastly admitted that a problem with its systems caused the outage, affecting news sites, streaming services and payments services for up to an hour © SOPA Images/LightRocket/Getty

Thousands of websites went offline for as much as an hour on Tuesday morning, including several of the world's largest news sites, streaming services, online retailers and even the UK government, disrupting millions of internet users.

Connectivity problems appeared to affect news sites including the BBC, New York Times, CNN and FT.com, streaming services Spotify, Twitch, Hulu and HBO Max, payments service Stripe and message board Reddit.

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (3)

[FONTE: FT, 8/06/2021]

A Silicon Valley-based internet infrastructure provider, Fastly, admitted that a problem with its systems caused the outage. It blamed a configuration error but has not provided a detailed explanation of what went wrong.

The company operates a content delivery network, which is designed to facilitate faster loading times for web pages and larger files such as music and video. Other large CDN providers include Cloudflare, Akamai and Limelight.

“We identified a service configuration that triggered disruptions across our POPs [points of presence] globally and have disabled that configuration. Our global network is coming back online,” said Fastly.

Though that would appear to rule out foul play, the UK’s National Cyber Security Centre, a branch of GCHQ, said: “We are aware of an issue affecting a number of websites and are working to understand the cause.”

CDNs store their corporate customers’ data on servers all over the world, easing the burden on the “backbones” of the internet by bringing content closer to consumers’ smartphones and PCs.

“It’s astonishing that one small piece of the immense jigsaw that powers the internet is able to cause such a massive outage,” said Ben Wood, analyst at CCS Insight, a tech consultancy. “On the one hand, it’s an unbelievably robust platform. On the flip side, these occasional blips underline the fragility of its fabric.”

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (4)

[FONTE: FT, 8/06/2021]

Fastly's online status page started reporting problems with its CDN services at 09.58 UTC.

After 59 minutes, it said: "The issue has been identified and a fix has been applied. Customers may experience increased origin load as global services return."

Recommended

Even an hour-long outage can cost millions of dollars in lost advertising revenues and online sales for the many companies, large and small, that rely on vital infrastructure providers such as Fastly.

"We were offline for a few minutes because the whole internet broke down," Jitse Groen, chief executive of food delivery group Just Eat Takeaway.com, wrote on Twitter.

As well as several prominent media groups, Fastly's website lists ecommerce platforms Shopify and Stripe, and retailers including Wayfair, Boots, Dunelm, Ticketmaster and Deliveroo among its customers.

Twitter accounts operated by technical teams at Shopify, Stripe and Spotify had all reported problems. Some PayPal users also reported difficulties accessing its website.

"It's astonishing that so many high-profile sites were affected by the metaphorical flick of a switch," said Wood. "It is a perfect example of how much society has become completely dependent on always-on, always-available connectivity."

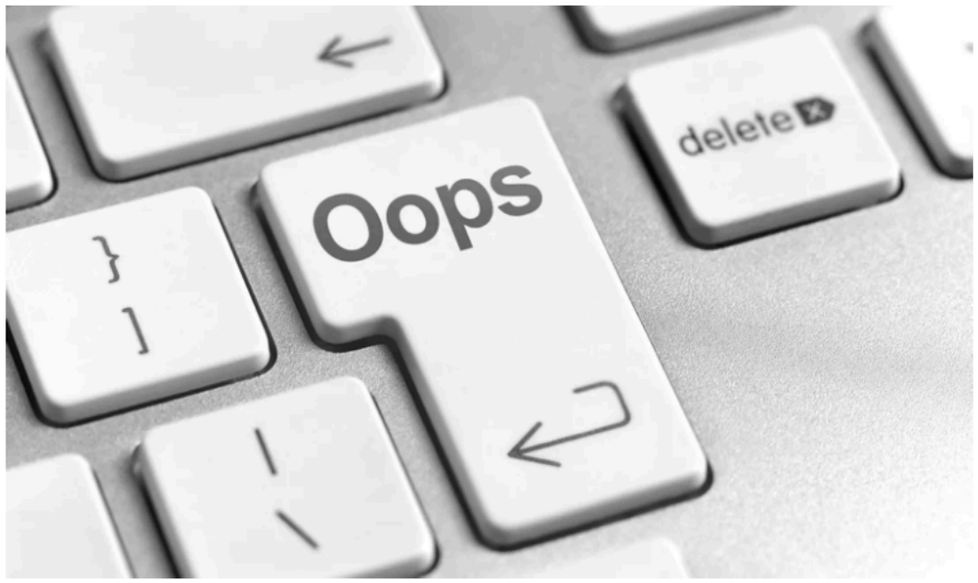
Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (5)

[FONTE: CNET, 8/06/2021]

What is Fastly and why did its outage break Amazon, Reddit, Twitch and much of the internet?

The internet was brought to its knees on Tuesday, with 503 errors showing up across the web.

June 8, 2021 5:04 a.m. PT



Not Fastly's proudest moment.

Peter Dazeley/Getty

Today will be remembered as the day the internet broke. On Tuesday morning, many of the websites we rely on daily, including Amazon, Reddit, Twitch, Pinterest and, unfortunately, CNET went offline due to a major outage at a service called Fastly. Everywhere you looked, there were 503 errors and people complaining they couldn't access key services and sites.

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (6)

[FONTE: CNET, 8/06/2021]

We know that Tuesday's internet outage was caused by a "service configuration," but not much more than that right now. Until Fastly investigates fully, it'll be hard to declare the root cause of the catastrophic failure. It's important to note that it's not necessarily a cybersecurity attack, as many people have speculated on Twitter. There are many technical reasons a CDN can fail, and cyber attacks are just one of them.

Why were so many websites affected by the Fastly outage?

Fastly is a widely used service by web publishers and services -- and it became apparent exactly how widely used on Tuesday when vast swaths of the internet was unavailable.

The reason it's so popular is that the services it provides are considered essential by many online web properties, but not many companies provide these services. As such, a vast number of websites are reliant on a very small group of companies to keep running.

As Corinne Cath-Speth, a Ph.D. candidate at Oxford Internet Institute and Alan Turing Institute pointed out on Twitter, this can mean "a technical hiccup in a single company can have huge ramifications."

"This in turn -- raises major questions about the dangers of (power) consolidation in the cloud market and the unquestioned influence these often invisible actors have over access to information," she added.

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (7)

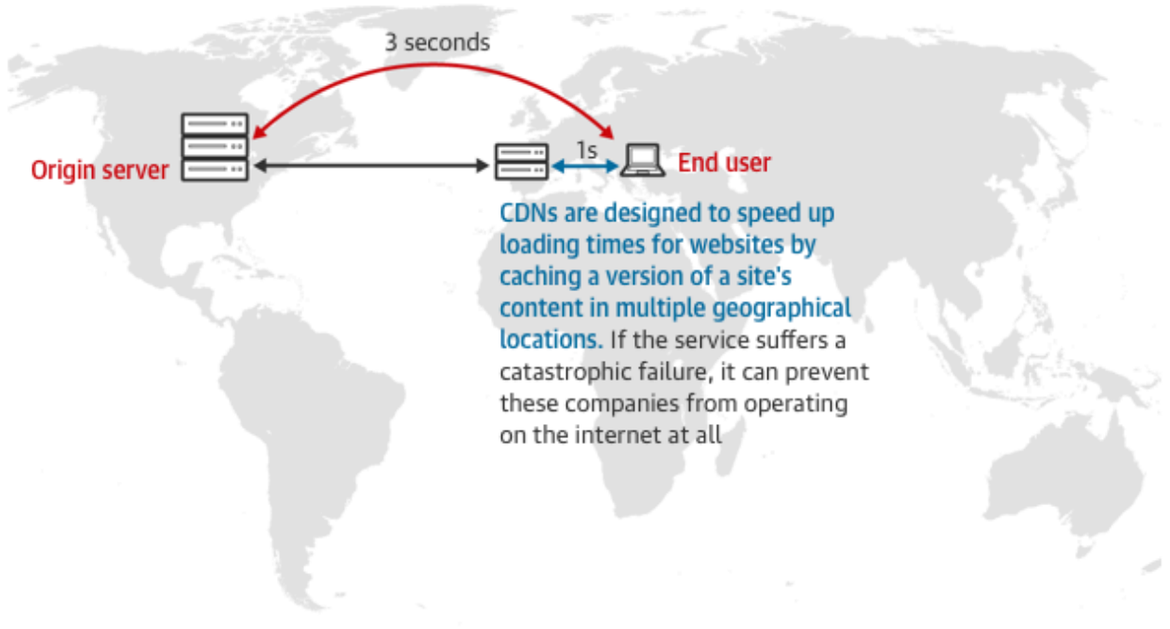
[FONTE: Guardian , 8/06/2021]

Major internet outage 'shows infrastructure needs urgent fixing'

Experts say outage shows internet services too centralised and lack resilience

How content delivery networks such as Fastly work

Without a CDN cache located nearby, a visitor in Europe viewing content hosted in the US will experience slow loading times as the request travels across the Atlantic and back again



Guardian graphic

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (8)

[FONTE: Guardian, 8/06/2021]

A CDN is a global network of servers, placed so that at least one server is close enough for a fast connection wherever a user lives. Customers like the Guardian send visitors to the CDN rather than their own servers, providing the content faster and protecting the website from being overloaded in the event of a spike in traffic.

But a CDN can also serve as a single point of failure: if the network collapses, it can also block all traffic going to the websites it protects. CDNs are more efficient the larger they are, creating a concentration of power to the market.

The vast majority of internet traffic is routed through a handful of CDNs, such as Fastly, Cloudflare, Akamai or Amazon's CloudFront. David Warburton, of the cybersecurity company F5 Labs, said centralisation is relatively new in the history of the internet and is likely to continue to cause problems.

"The web as a whole was intended to be decentralised," he said. "By not relying on any one central system, it meant that many different components could fail and internet traffic could still find a way to get where it needed to go. What we've seen over the past decade, however, is the unintentional centralisation of many core services through large cloud solution providers like infrastructure vendors and CDNs."

Paddy McGuinness, who was deputy national security adviser responsible for intelligence security and resilience between 2014 and 2018, said the outage should be considered "a wake-up call" and politicians needed to broaden the existing security-driven approach as technology brings new services to the British public.

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (9)

[FONTE: Guardian, 8/06/2021]

The intelligence agencies GCHQ and its cybersecurity arm the NCSC (National Cyber Security Centre) working alone "could not prevent disruption", McGuinness argued, partly because a key part of their remit was to detect and prevent hostile state and hacker attacks, rather than ensuring the long-term stability of critical consumer services.

The cost of such an outage can be enormous. In 2015, when the scale of the internet economy was a fraction of today's, the cost of cloud service outages were estimated at almost $300m (about £210m) a year, says Prof Rebecca Parry, of Nottingham Law School. "Liability for loss of service will probably be covered by the 'service level agreement' with customers of paid-for cloud services," Parry said, "but the agreements will typically not cover all losses sustained."

A typical Fastly customer is unlikely to receive more than $1,000 in refunded fees for the outage, those with knowledge of the company's "service level agreements" say. But their true costs could be hundreds of times that, says Chris Huggett, of Sungard Availability Services. "With the average cost of downtime now $250,000 an hour, every minute counts."

In November 2020, AWS, Amazon's cloud-hosting arm, suffered a multi-hour outage in the middle of the US west coast's afternoon. The collapse in the service, which interacts with about 40% of the entire internet, took out sites and services including 1Password, Flickr, iRobot, and the Washington Post.

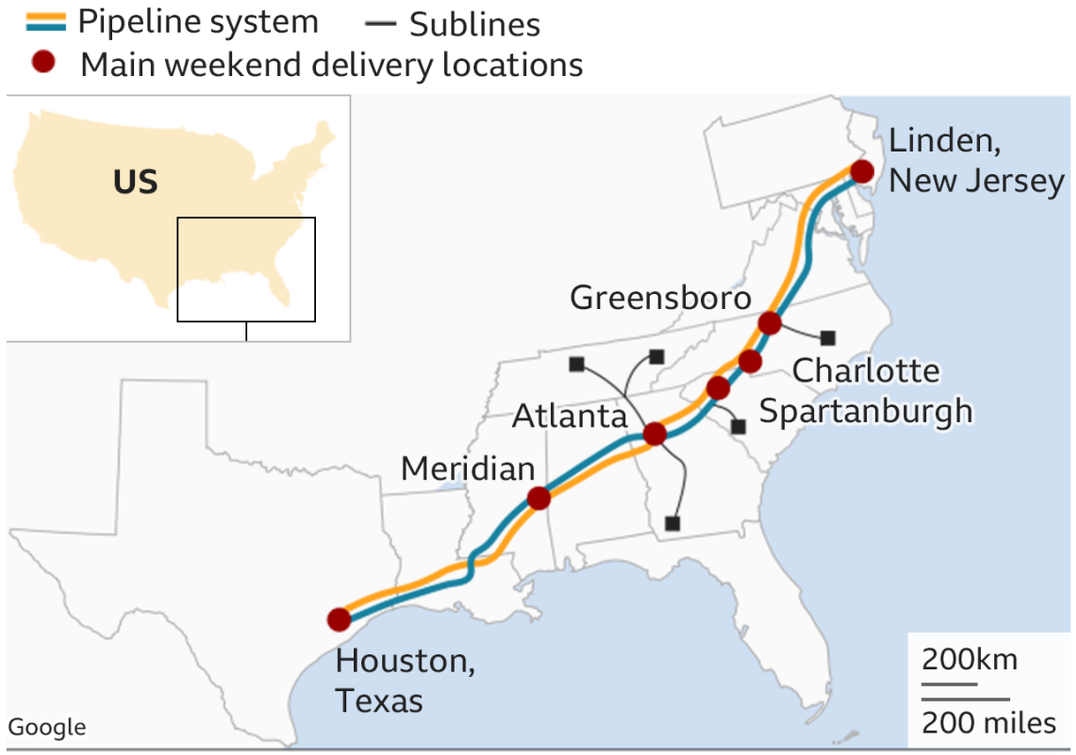
Months earlier, a failure at Cloudflare, another CDN like Fastly, had rendered much of the web inoperable. That was traced to a single error in a physical link between datacentres in Newark and Chicago, which spiralled into an outage that took almost two hours to fix fully.

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (10)

[FONTE: FT, 11/05/2021. Mapa: BBC]

Cyber attack sparks US effort to keep fuel lines open

Emergency powers enacted after ransomware strike shuts Colonial Pipeline system



Source: Colonial Pipeline Company BBC

The US government enacted emergency powers on Sunday in a bid to keep fuel supply lines open as fears of shortages rose following the shutdown of an essential pipeline.

The move lifted various limits on the transport of fuels by road to ease the fallout from the continuing closure of the Colonial pipeline, which carries almost half the fuel consumed on the US east coast, following a ransomware cyber attack on Friday.

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (11)

[FONTE: FT, 11/05/2021]

"This Declaration addresses the emergency conditions creating a need for immediate transportation of gasoline, diesel, jet fuel and other refined petroleum products and provides necessary relief," the Department of Transportation said.

The order came as the government scrambled to deal with the repercussions from the closure of Colonial, the biggest refined products pipeline in the US, which transports 2.5m barrels of fuel a day from refineries on the Gulf Coast to markets such as Atlanta, Washington and New York.

The pipeline's operator, the Colonial Pipeline Company, was forced to take the entire system offline on Friday after an attack it attributed to ransomware, whereby hackers seize control of a victim's computer systems or data by installing illicit software and release the assets only once payment is made.

Colonial said on Sunday evening that its main lines remained offline, but that some smaller lines between terminals and delivery points had been returned to service. It gave no indication of when full service would resume.

"We're realising the gravity of it is maybe worse than what we'd expected," said De Haan. "There's still a little breathing room, we're starting to run low on it. But Monday, Tuesday if there's no news, you know we're dealing with something fairly significant."

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (12)

[FONTE: FT, 11/05/2021]

The pipeline is the country's biggest conduit for refined products, spanning more than 5,500 miles from Pasadena, Texas to Linden, New Jersey and New York Harbor. It serves some of the country's transport hubs, including its busiest airport, Hartsfield-Jackson in Atlanta.

Gasoline demand in areas served by the pipeline rose about 4 per cent on Saturday compared with the previous week, according to GasBuddy, indicating panic buying as consumers fretted over the potential for a prolonged outage.

The shutdown may trigger another rise in US petroleum imports, exposing the country's energy vulnerability despite a decade of soaring domestic and gas production.

"The base case is that it's resolved quickly, but if not US gasoline and diesel prices will have to rise very significantly to draw in sufficient imports from Europe," said Robert Campbell, head of oil products research at consultancy Energy Aspects.

Refiners on Gulf Coast that used the pipeline to ship products eastward would be forced to trim back fuel production, he said.

Large pipelines increasingly rely on automation to monitor flows and pressure and control batches of deliveries of petroleum products, increasing the potential disruption of a hack.

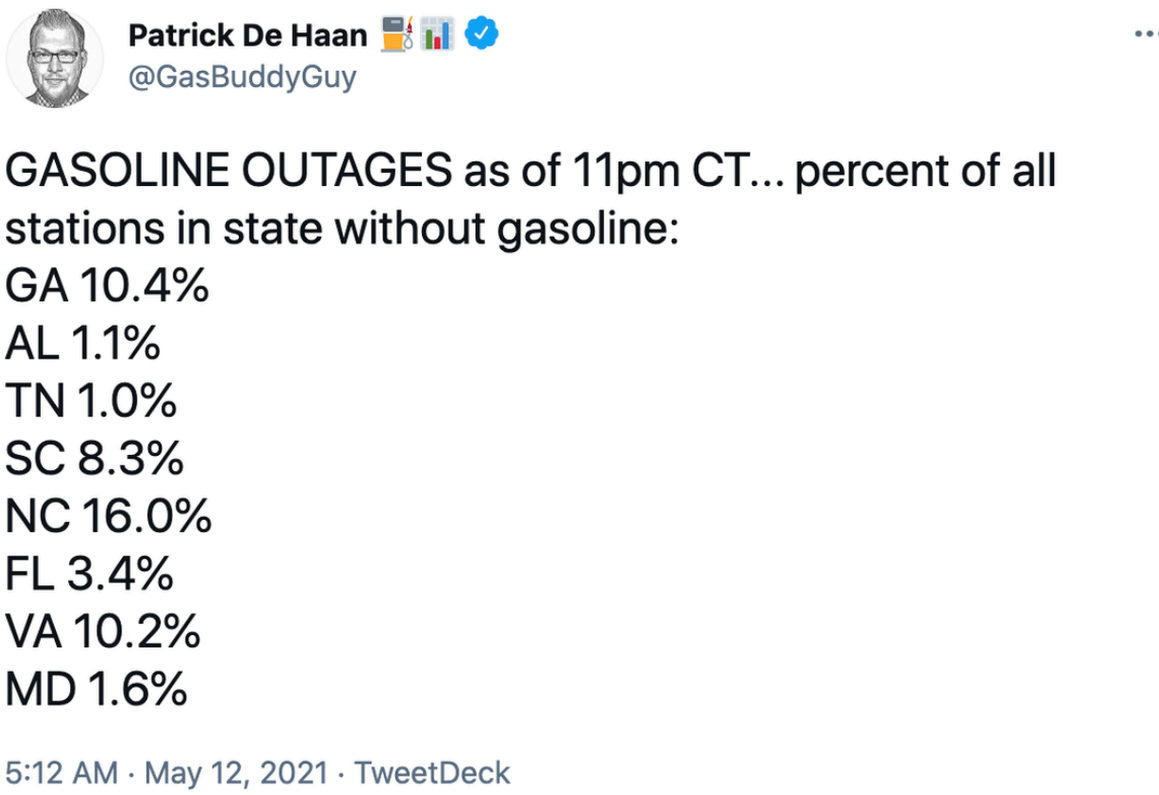
"This is definitely not a schoolboy prank. This is a highly sophisticated

attack on a piece of critical infrastructure," said Campbell.

The attack came amid growing concerns about cyber security vulnerabilities in critical US infrastructure after last year's SolarWinds attack, which authorities have attributed to Russia.

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (13)

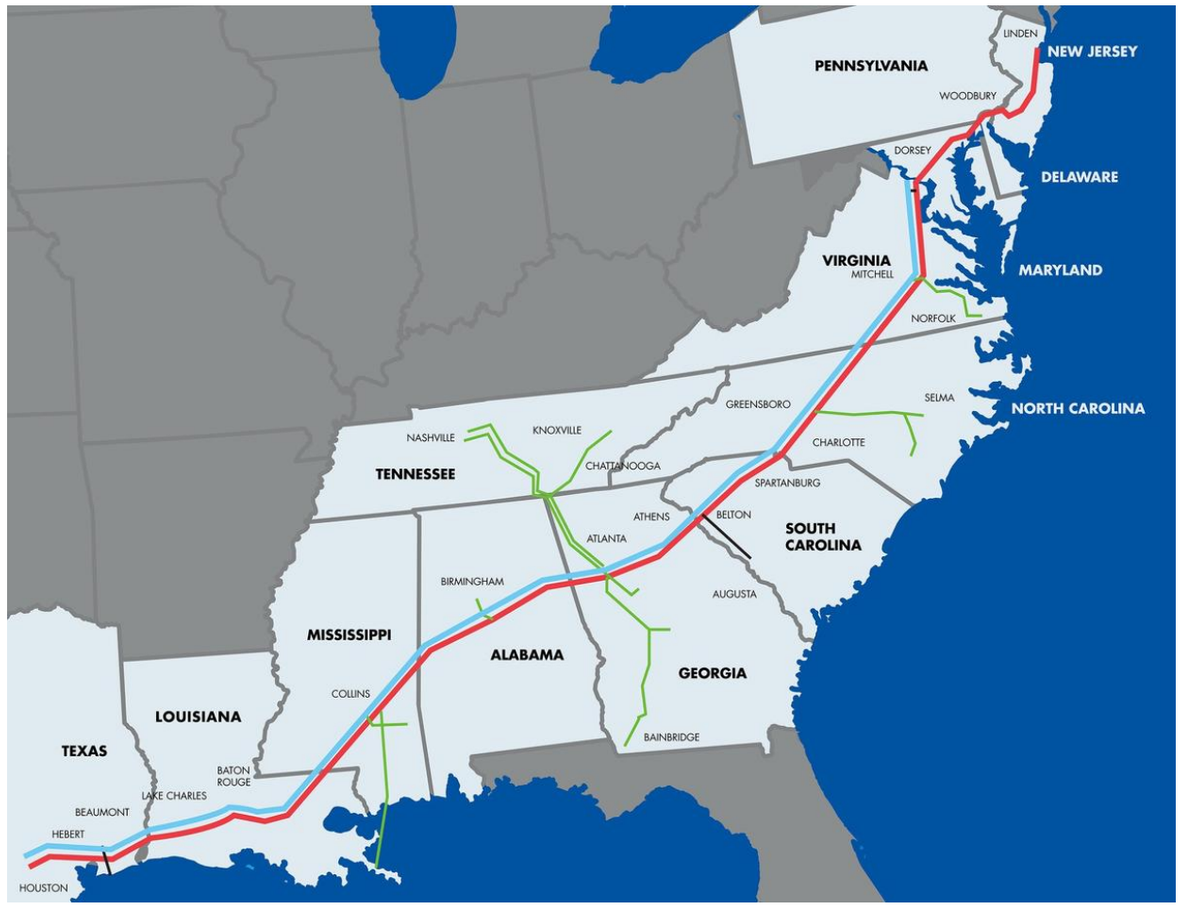
[FONTE: ZDNET, 13/05/2021]



Patrick De Haan
@GasBuddyGuy

GASOLINE OUTAGES as of 11pm CT... percent of all stations in state without gasoline:
GA 10.4%
AL 1.1%
TN 1.0%
SC 8.3%
NC 16.0%
FL 3.4%
VA 10.2%
MD 1.6%

5:12 AM · May 12, 2021 · TweetDeck



Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (14)

[FONTE: NYT, 14/05/2021]

Pipeline Attack Yields Urgent Lessons About U.S. Cybersecurity

The hack underscored how vulnerable government and industry are to even basic assaults on computer networks.

Published May 14, 2021Updated June 8, 2021

Cybersecurity experts said Colonial Pipeline would never have had to shut down its pipeline if it had more confidence in the separation between its business network and pipeline operations.Drone Base, via Reuters

For years, government officials and industry executives have run elaborate simulations of a targeted cyberattack on the power grid or gas pipelines in the United States, imagining how the country would respond.

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (15)

[FONTE: NYT, 14/05/2021]

The attacker was not a terror group or a hostile state like Russia, China or Iran, as had been assumed in the simulations. It was a criminal extortion ring. The goal was not to disrupt the economy by taking a pipeline offline but to hold corporate data for ransom.

The most visible effects — long lines of nervous motorists at gas stations — stemmed not from a government response but from a decision by the victim, Colonial Pipeline, which controls nearly half the gasoline, jet fuel and diesel flowing along the East Coast, to turn off the spigot. It did so out of concern that the malware that had infected its back-office functions could make it difficult to bill for fuel delivered along the pipeline or even spread into the pipeline's operating system.

What happened next was a vivid example of the difference between tabletop simulations and the cascade of consequences that can follow even a relatively unsophisticated attack. The aftereffects of the episode are still playing out, but some of the lessons are already clear, and demonstrate how far the government and private industry have to go in preventing and dealing with cyberattacks and in creating rapid backup systems for when critical infrastructure goes down.

In this case, the long-held belief that the pipeline's operations were totally isolated from the data systems that were locked up by DarkSide, a ransomware gang believed to be operating out of Russia, turned out to be false. And the company's decision to turn off the pipeline touched off a series of dominoes including panic buying at the pumps and a quiet fear inside the government that the damage could spread quickly.

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (16)

[FONTE: ZDNET, 14/05/2021]

DarkSide explained: The ransomware group responsible for Colonial Pipeline attack

Updated: The group's existence is tied to a murky web of shorted stocks, criminality, and failed attempts to appear as Robin Hood.

The FBI said on May 10 that the agency is working with Colonial to investigate the incident.

But who is responsible? According to the FBI, the DarkSide ransomware group.

"The FBI confirms that the Darkside ransomware is responsible for the compromise of the Colonial Pipeline networks," the law enforcement agency says. "We continue to work with the company and our government partners on the investigation."

DarkSide is a group believed to have been active since the summer of 2020. DarkSide's malware is offered under a Ransomware-as-a-Service (RaaS) model, and once a system has been breached, ransomware payment demands can range from $200,000 to $2,000,000.

The group has previously been connected to "big game" hunting methods, in which large organizations are targeted -- which would fit with the Colonial Pipeline incident.

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (17)

[FONTE: ZDNET, 14/05/2021]

DarkSide 2.0, the latest version of the ransomware, was recently released under an affiliates program. According to FireEye, affiliates are required to pay up to 25% of ransom payments under $500,000, and 10% of any successful extortion attempts over $5 million.

Sophos

DarkSide also employs double-extortion tactics -- joining the likes of Maze, Babuk, and Clop, among others -- to pressure victims into paying up. At the time of a cyberattack, confidential information may be stolen and threats made to publish this data on a leak site if the victim refuses to give into blackmail.

The leak site operated by DarkSide has gone so far as to create a press corner for journalists and 'recovery' firms to reach them directly.

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (18)

[FONTE: FT, 7/06/2021. Foto: PCMag]

US says it recovered large portion of Colonial Pipeline ransom

Justice department officials seize $2.3m of cryptocurrency payments from ransomware attack

June 7 2021

US officials said they have recovered $2.3m worth of the ransom payment made to hackers who shut down the Colonial Pipeline last month and disrupted the country's fuel supplies for several days.

Justice department officials said on Monday that they had identified a virtual wallet used by suspected Russia-based ransomware group DarkSide from which they seized the funds in a rare instance of a ransom recovery.

Ciberataques e cibersegurança: a vulnerabilidade das economias digitais (19)

[FONTE: Banco de Portugal, 21/02/2021]

BANCO DE PORTUGAL
EUROSISTEMA

Banco de Portugal reitera alertas aos consumidores sobre riscos associados aos ativos virtuais

Perante a recente volatilidade observada nos preços de determinados ativos virtuais, designadamente a Bitcoin, o Banco de Portugal reitera os alertas anteriormente dirigidos aos consumidores no que respeita aos riscos associados à utilização e comercialização destes ativos. Em particular, o Banco de Portugal chama a atenção para os seguintes riscos:

- Os ativos virtuais não têm curso legal em Portugal, pelo que a sua aceitação pelo valor nominal não é obrigatória;
- Os ativos virtuais não são garantidos pelo Banco de Portugal ou por qualquer autoridade nacional ou europeia;
- Não existe, atualmente, qualquer proteção legal que garanta direitos de reembolso ao consumidor que utilize ativos virtuais para fazer pagamentos, ao contrário do que acontece com instrumentos de pagamento regulados;
- A informação sobre ativos virtuais disponibilizada aos consumidores pode ser inexata, incompleta ou pouco clara, e a formação do preço destes ativos é, frequentemente, pouco transparente;
- A maior parte dos ativos virtuais está sujeita a uma enorme volatilidade. Em caso de desvalorização parcial ou total dos ativos virtuais, não existe um fundo que cubra eventuais perdas dos seus utilizadores, os quais terão de suportar todo o risco associado às operações com estes instrumentos. Como tal, o utilizador de ativos virtuais pode perder grande parte ou a totalidade do capital investido;
- As transações com ativos virtuais podem ser utilizadas indevidamente, em atividades criminosas, incluindo de branqueamento de capitais e do financiamento do terrorismo;
- Grande parte das entidades que comercializam ativos virtuais não se encontram sediadas em Portugal, pelo que qualquer resolução de conflitos poderá enquadrar-se fora da competência das autoridades nacionais.

O Banco de Portugal é, desde 1 de setembro de 2020, a autoridade com competências quer no registo, quer na verificação do cumprimento das disposições legais e regulamentares aplicáveis em matéria de prevenção do branqueamento de capitais e do financiamento do terrorismo, por parte das entidades que exerçam alguma das seguintes atividades com ativos virtuais: serviços de troca entre ativos virtuais e moedas fiduciárias ou entre um ou mais ativos virtuais; serviços de transferência de ativos virtuais; e serviços de guarda ou guarda e administração de ativos virtuais ou de instrumentos que permitam controlar, deter, armazenar ou transferir esses ativos, incluindo chaves criptográficas privadas.

Esclarece-se, no entanto, que relativamente a tais entidades, a competência do Banco de Portugal se circunscreve apenas à prevenção do branqueamento de capitais e do financiamento do terrorismo, não se alargando a outros domínios, de natureza prudencial, comportamental ou outra.

Sugestões de leitura