



LightBike

SDG.7 Affordable and clean energy

EurAsia Course- Burgos University 2021

Marcos Raufast García
Marina Leiro Escribano
Julen Renedo Beunza
Juan Luis García González

Contents

1. Description of the challenge you will be working with (Goal + challenges/s) and its context.	2
2. What specific measures will be implemented?	5
3. What are the reasons you would give to find a solution to the problem?	6
4. What is your target group?	7
5. Which European and Asia actors will be involved in the execution of your proposal?.....	8
6. In which way university students will collaborate in the development of your proposal?.....	8
7. Briefly explain the viability of the project	9
8. What is the expected “positive social impact”?	10
9. Sources	12

1. Description of the challenge you will be working with (Goal + challenges/s) and its context.

We will be working with challenge number 7 Ensure Access to Affordable, Reliable Sustainable, and Modern Energy for All, this challenge is closely related to challenge 13 take urgent action to combat the climate change and its effects.

Energy is the engine of prosperous societies. A well-established energy system supports all sectors from business, education, medicine, agriculture, infrastructure, communications, and high technologies.

And conversely, the lack of access to energy supply and transformation systems is an obstacle to human and economic development.

13 per cent of global population still lacks access to modern electricity.

3 billion of people rely on wood, coal, charcoal or animal waste for cooking and heating

The 2030 agenda wants to guarantee universal access to adequate energy services, increases the share of renewable energy, and double energy efficiency.

Research infrastructure and clean technologies will be crucial in achieving this goal.

To do it we need to promote investment and international cooperation.

Moreover, energy is the dominant contributor to climate change, accounting for around 60 per cent of global greenhouse gas emissions.

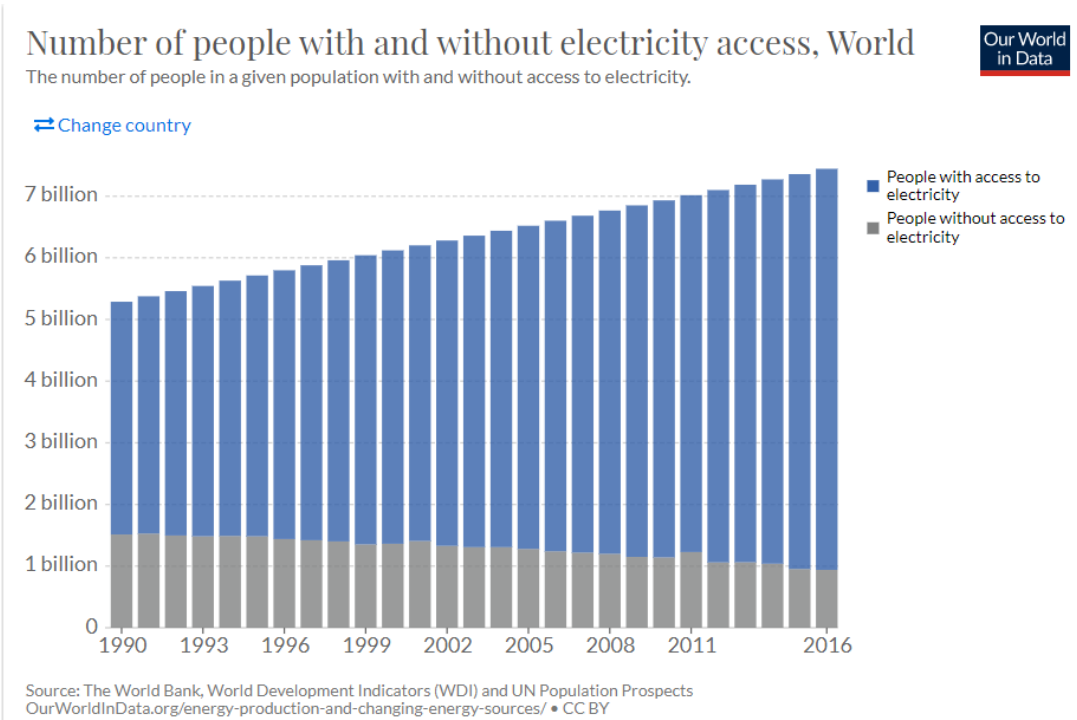
For this reason, to achieve sustainable development we have to immediately undergo an energy transition bases on rational use and non-polluting energies. This way all people can have access to energy services.

The 2030 agenda has defined 5 targets and 6 indicators for SDG 7. Targets specify the goal and indicators represents the metrics by which the word aims to track whether these targets are achieved.

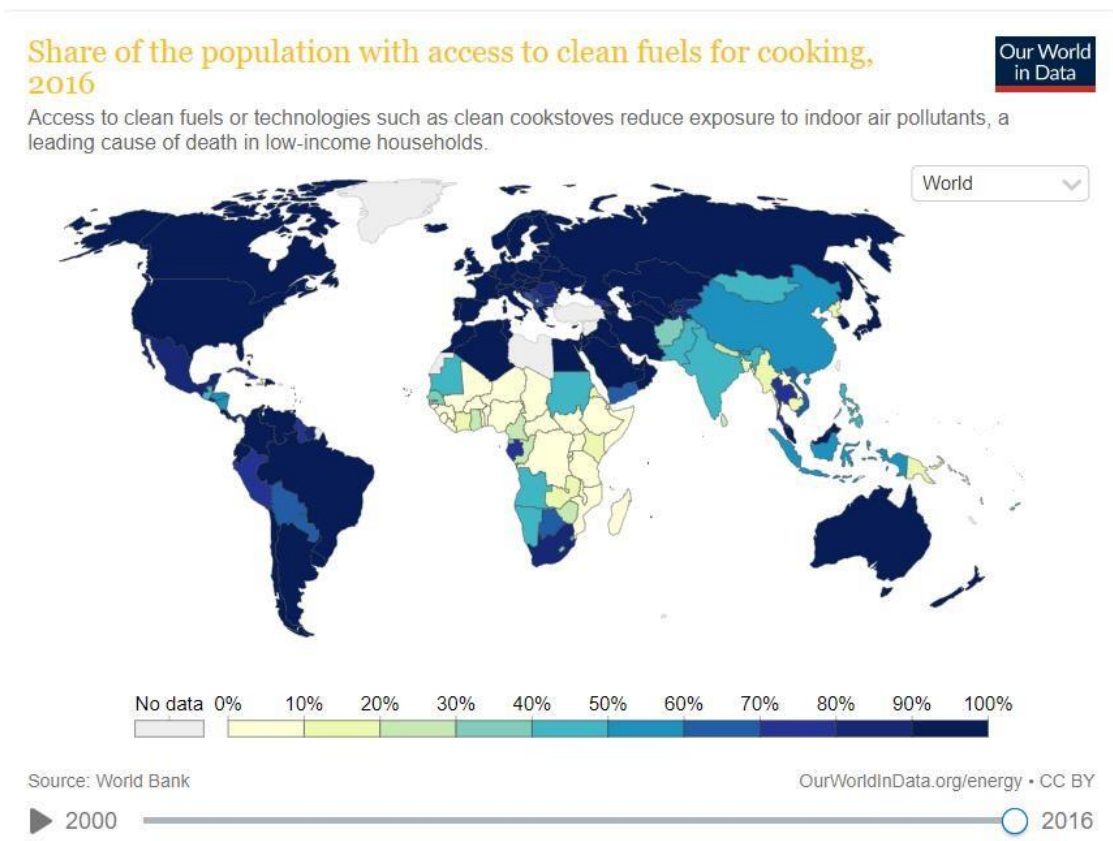
Target 7.1 Universal access to modern energy

7.1.2 Access to clean fuels for cooking

Goal: “By 2030, ensure universal access to affordable, reliable and modern energy services”



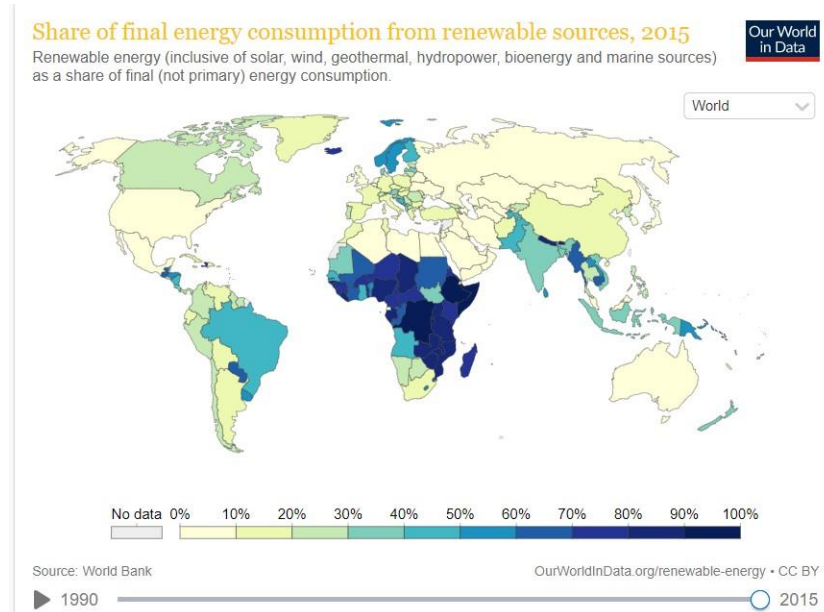
GRAPHIC 1. NUMBER OF PEOPLE WITH AND WITHOUT ELECTRICITY ACCESS



GRAPHIC 2. SHARE OF THE POPULATION WITH ACCESS TO CLEAN FUELS FOR COOKING.

Target 7.2: Increase global percentage of renewable energy

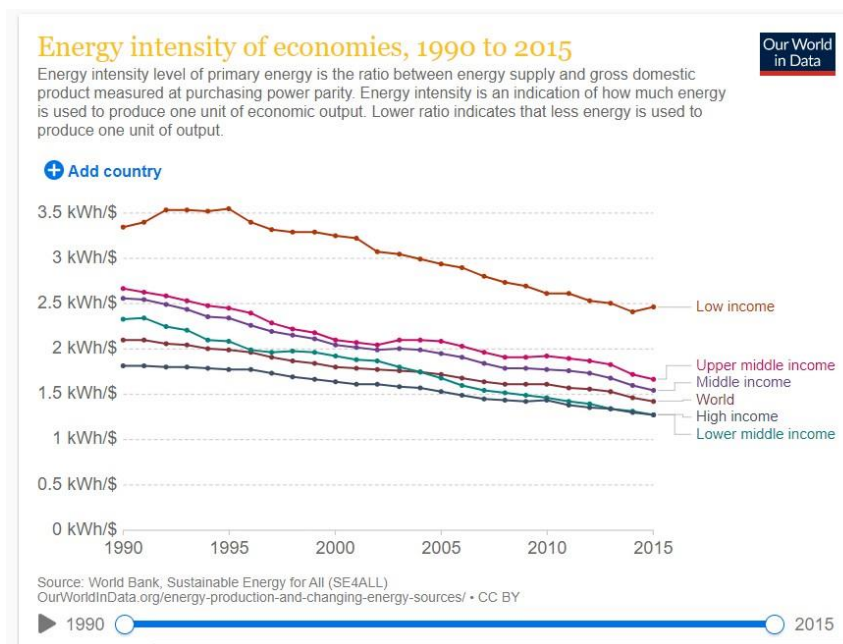
Goal: “By 2030, increase substantially the share of renewable energy in the global energy mix”



GRAPHIC 3. ENERGY CONSUMPTION FROM RENEWABLE SOURCES.

Target 7.3: Double the important in energy efficiency

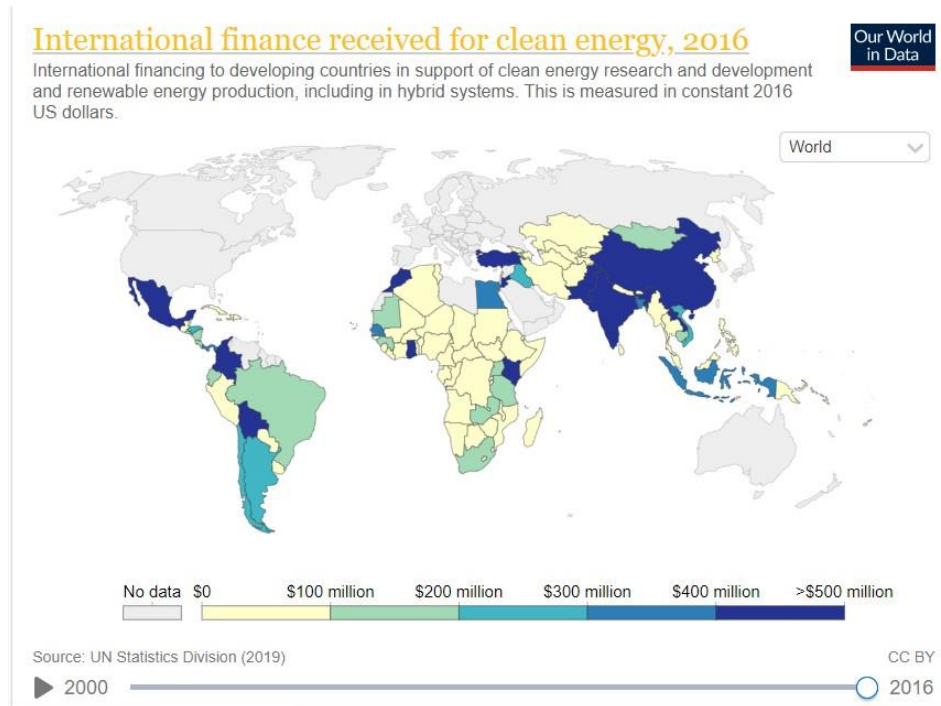
Goal: “By 2030, double the global rate of improvement in energy efficiency”



GRAPHIC 4. ENERGY INTENSITY OF ECONOMIES.

Target 7.A: Promote access, technology, and investments in clean energy

Goal:” By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology”



GRAPHIC 5. INTERNATIONAL FINANCE RECEIVED FOR CLEAN ENERGY.

Target 7.B: Expand and upgrade energy services for developing countries

Goal: “By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support”

2. What specific measures will be implemented?

It could be difficult to think about specific measures which make up solutions in all aspects and problems of pollution. Each solution must be thought to solve a particular situation at a specific place. Moreover, solutions do not only face pollution issues but also, must come up against international and different laws between countries. A

measure in China could be supposed to be a good way to achieve the seven-goal but, the idea maybe is considered as a bad decision by European governments.

So, the nature and the way of implementing each measure depends on several aspects being inappropriate talking about “specific measures”. Nevertheless, it is possible to establish guidelines to properly focus the future measures that can be approved.

One of the most relevant ideas, which takes part in the decline of social problems, especially in developing countries, consist of giving away the 0.7% of the total PIB. No countries are on duty, but it is supposed to be given by the most developed countries.

This quantity of money is irrelevant to this type of countries but can make a big difference in little countries

It will be established, in a cooperative way, a framework in which, developing countries will be able to receive economic aids to ensure their electricity supplies.

On the other hand, there are other measures proposed to be implemented by local councils. For example, in Burgos, the association of parents of people with autism, suggests implementing solar panels in public or new buildings.

3. What are the reasons you would give to find a solution to the problem?

We believe that the main reasons for finding a solution to the problems of SGD number 7 are the inequality of the countries and poverty, which are reasons that are closely related to each other.

Economy inequality is a deep mark that is taking away the basic rights of word citizenship, like the rest of the faces of inequality, it’s an obstacle for anyone.

We believe that energy-related poverty means two things: poor people are the least likely to access energy, and they are most likely to remain poor if they lack electricity.

In Africa for example, the lack of electricity remains overwhelming.

Even countries with access often have very unreliable services. One in three developing countries with access often has very unreliable service. One in three developing countries experiences at least 20 hours of power outages per month.

Inclusive economic growth is the most effective means of reducing poverty and boosting prosperity. However, most of the economic activity is not possible without the existence of modern, adequate, reliable energy at competitive prices

Another problem is the COVID-19

Even though before the start of the crisis caused by COVID-19 important achievements were made in several aspects of Sustainable Development Goal 7, in particular a notable reduction in the number of people without access to electricity in all the world, a significant increase in renewable energy for electricity generation, and improvements in energy efficiency. Global efforts remain insufficient to meet the key SDG 7 targets by 2030, especially if the coronavirus disrupts electrification efforts seriously.

With less than 10 years to go to achieve the United Nations Sustainable Development Goal 7, global efforts must be redoubled, particularly in Africa, or the world will fail to ensure universal access to affordable energy by 2030, safe, sustainable, and modern.

Increasing the pace of progress in all regions will require stronger political commitment, long-term energy planning, increased public and private financing, and adequate regulatory and fiscal incentives to stimulate faster deployments of new technologies.

4. What is your target group?

When we were wondering about what specific measure we would propose to help in the solution of the energetic problem, we have clarified that it cannot only solve this problem, it must come up against other social problems.

So, what currently are the most visible issues?

-Coronavirus, there is no doubt that the current situation is increasing the number of social problems. Our idea must respect coronavirus obligations such as distance or mask, but we are focused on the other side of the coin. Not only poor people but also the middle class, people who have been living a high standing life, nowadays, they are having enormous social and economic problems. Our idea must help them.

-Energetic problem.

-International problems: we live in a world in which, every other day we can hear on the radio or television things like international wars, the conflict between governments. It is necessary to make sure that our idea doesn't depend on economic or political aspects we want to make up a project that everybody can implement everywhere every time. It must be a neutral project.

All facts knock the project into shape. Our idea is not just realistic but also challenging and ambitious.

The main idea of the project consists of implementing generators in public bikes. It allows people to produce electricity while they are riding a bike. This electricity will be generated in an indirect way not involving any pollution.

5. Which European and Asia actors will be involved in the execution of your proposal?

On one hand, the European Union Energetic Policy is based on the 194th Article of the Treaty on the Functioning of the European Union (TFEU). The European Council adopts the general lines of this policy, where it can be found the targets by 2030 (Revised in December 2018). Our proposal will contribute to enhancing the second target: “An increase to 32% of the share of renewable energies in energy consumption”.

Within the Spanish framework, a Climate Change and Energetic Transition Law will be predictably approved in May 2021, after passing the Senate. Behind this law, two goals are related to our proposal, including a bet for clean mobility:

- Reaching an electric system with, at least 74% of renewable energy production.
- Reaching a renewable energy consumption of at least 42%.

On the other hand, the Eurasian Economic Union was established in 2015 between Kazakhstan, Belarus, Russia, Kirgizstan, and Armenia. In the foundation Treaty, Article 4 “Main Objectives of the Union”, it’s included “*to create proper conditions for the sustainable economic development of the Member States to improve the living standards of their population*”, an objective that matches with our view.

In a global framework, The Paris Agreement, adopted by 196 Parties at UN Climate Change Conference (COP 21 in Paris, on 12 December 2015), entered into force on 4 November 2016 and pursued to limit the increase of global warming below 2 degrees Celsius. Our proposal will help to reduce the carbon, gas emissions, main figures of this harmful increase.

6. In which way university students will collaborate in the development of your proposal?

We think that university students will have the main role in this project, young people must be the boosters for an ecologic and sustainable society, the example for a possible

better world. This new city’s bike model will be useful for all the community and, specifically, for the movements of youth. Using these bikes, we reduce the massive use of cars, a present and future serious issue in cities highly populated. If cities and countries promote the bike’s ways, making public policies disfavoured the use of the pollutant cars and young people start to move in bicycle, for short/medium movements around the city, the society will be able to move in public transport, walking or by bike mainly. The university students could help in the next ways:

- Explaining the benefits of this idea: The thinking of society must be changed; the conventional car will not be an option in the future and riding these bikes will generate clean electric energy without using fuel and without emissions of carbon dioxide.
- Sharing and promoting the use of bikes in social networks: In this globally interconnected world, it’s necessary to make this project visible and attractive. If people see that students are using electric generator bikes, they will start to ride them.
- Teaching how bicycles work: It’s possible that people get confused because they don’t understand how the bikes generate electricity. Some students could explain and solve the doubts.
- Another way for students to help with this project is that they use these bicycles and be an example for others.

7. Briefly explain the viability of the project

The project will be implemented gradually. Firstly, at a local level, the City Council of Burgos will buy a pack of batteries for public bicycle stations, connected with the streetlights nearby, which they will receive the energy produced by those who ride a bike.

Currently, the number of stations in Burgos is 23, and we must point out that the total bike consumption in 2019 was more than 30.000 times a year, an amount which was eagerly reduced in 2020, due to the Coronavirus context. Curfews and lockdowns made this number decrease to less than 20.000 times.

In the 2021's budget of the City Council of Burgos, it is shown that almost 6.000.000 € are invested for street lighting, consuming 600 kW per year. Our goal is to reduce that amount progressively, after input for batteries and its adaptation to bicycles. There will be a connection between streetlights and bike stations. With a small investment, we will test its savings for the City Council. After that, every bike in the city will have a battery and it will save a lot of money, which will be re-invested in bonuses for people with not enough resources, affected by the COVID pandemic.

Our plan doesn't stop here, we will launch our proposal to every interesting city, creating a multilanguage partner network to debate more adaptations, new proposals, or new ways to reduce costs, which will enrich us not only in terms of sustainability but also culturally and economically.

8. What is the expected "positive social impact"?

At first, this project will change the mentality of the citizens in our daily movements, especially in cities. It feels like a very little step to transform the world, however, this kind of proposal is important to improve our society and transforming it little by little in an ecologic community, with fully renewable energy consumption. It's not only a form of promoting the use of bikes, in addition, and indirectly, it affects in use of cars and motorbikes and this has some benefits like fewer cars in our city streets, a new situation that could affect positively in our cities and villages:

- More streets for pedestrians only, wider than nowadays. Will be safe and comfortable because there won't be car accidents.
- More bike roads, also new electric innovations in the last years, and thinking in this new form of movement without cars.
- Actually, the car roads subtract a lot of useful space. With fewer cars on our roads, appears the possibility of making cities more natural, with more green areas, parks and another positive site for citizens like sports parks, for example. In addition, underground parking and other spaces for cars could be used for other services like supermarkets.

- Moving by car makes some environmental issues that are a serious problem in our society. The pollution and the noise contamination will be reduced a lot with our project. Apart from that, it's the transport that consumes the highest amount of energy per capita, this increases in the traffic jams. If people start to use public transport massively, or other options, these problems will disappear in the future.

9. Sources

La Convención Marco de Naciones Unidas sobre el Cambio Climático (CMNUCC). La

Convención Marco de Naciones Unidas sobre el Cambio Climático.

<https://www.miteco.gob.es/es/cambio-climatico/temas/el-proceso-internacional-de-lucha-contr-el-cambio-climatico/naciones-unidas/CMNUCC.aspx>

Cerrillo Barcelona, A. (2018, 18 junio). *Los diez pilares de la transición energética en España.* La Vanguardia.

<https://www.lavanguardia.com/natural/20180615/45103613829/los-diez-pilares-de-la-transicion-energetica-en-espana.html>

Energy policy: general principles / Fact Sheets on the European Union / European Parliament. European Energy Policy.

<https://www.europarl.europa.eu/factsheets/en/sheet/68/energy-policy-general-principles>

Planelles, M. (2021b, abril 8). *Las medidas más importantes de la nueva ley de cambio climático.* EL PAÍS. <https://elpais.com/clima-y-medio-ambiente/2021-04-08/las-medidas-mas-importantes-de-la-nueva-ley-de-cambio-climatico.html>

United Nations. (2015). *PARIS AGREEMENT.*

https://unfccc.int/sites/default/files/english_paris_agreement.pdf

RED ELÉCTRICA DE ESPAÑA. (2021, September). *Cambio climático y transición energética.*

https://www.ree.es/sites/default/files/Cambio_climatico_y_transicion_energetica.pdf

Eurasian Economic Union. Eurasian Economic Union.

<http://www.eaeunion.org/?lang=en#info>

Burgos Mobility Service

Ayuntamiento de Burgos. Ayuntamiento de Burgos. <http://www.aytoburgos.es/>

Hannah Ritchie and Max Roser (2019) - *Access to Energy*. Published online at

OurWorldInData.org. Retrieved from: 'https://ourworldindata.org/energy-access'

Naciones Unidas (2019)-*Objetivos de desarrollo*

sostenible.<https://www.undp.org/content/undp/es/home/sustainable-development-goals/goal-7-affordable-and-clean-energy.html>

Adhikari, D. (2018). *Universal electricity access: Why should we wait until 2030?*.

Recuperado 11 de marzo de 2021, de The Himalayan Times website:

<https://thehimalayantimes.com/opinion/universal-electricity-access-why-should-we-wait-until-2030>

Post-COVID, we could build a more prosperous society. Recuperado el 2 de mayo de 2021, de Hubcityspokes.com

<https://www.hubcityspokes.com/opinion-columns/post-covid-we-could-build-more-prosperous-society>

Ecotelhado. (2015, septiembre 10). *Saiba como utilizar a energia e ter economia*.

Recuperado el 2 de mayo de 2021, de Ecotelhado.com

<https://ecotelhado.com/saiba-como-utilizar-a-energia-e-ter-economia-2/>

ODS 7: ¿Seguimos a años luz del acceso igualitario a la energía? (s/f). Recuperado el 2 de mayo de 2021, de Atalayar.com website: <https://atalayar.com/content/ods-7-%C2%BFseguimos-a%C3%B1os-luz-del-acceso-igualitario-la-energ%C3%ADa>

Agudo, A. (2017, diciembre 14). El 1% de la población con más ingresos gana el doble que el 50% más pobre en el mundo. Recuperado el 2 de mayo de 2021, de Elpais.com website: https://elpais.com/elpais/2017/12/13/planeta_futuro/1513168215_377975.html

colaboradores de Wikipedia. (2020, 17 noviembre). *Ayuda oficial al desarrollo*. Wikipedia, la enciclopedia libre. https://es.wikipedia.org/wiki/Ayuda_oficial_al_desarrollo

[El pib y la economia de mexico se contraen austeridad inversion publica]. (2020). <https://www.reporteindigo.com/indigonomics/el-pib-y-la-economia-de-mexico-se-contraen-austeridad-inversion-publica/>

[Panel Solar]. (2020). <https://www.azocleantech.com/article.aspx?ArticleID=1075>

vicesat. (2021, 29 marzo). *PATINETE HIBRIDO CASERO (200Km/L) Motor de Gasolina y Motor Electrico a la vez*. YouTube. <https://www.youtube.com/watch?v=VdJTwgs9KLg>