Regulatory and policy framework for the uptake of renewable energy generation in the United Kingdom

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Abstract: Energy policies and regulations are constantly introduced to reflect the current developments of the energy system. The introduction of sustainable energy technologies creates a demand for alternative sources of energy and economic incentives which are widely adopted. This paper presents the panorama of the energy regulatory system and the perspective of new policies and regulations required to promote the trade of energy from the perspective of small scale self-consumers and exporters of renewable energy; specially, the operation of feed-in tariffs and their proposed replacement, the Smart Export Guarantee and its application within energy storage technologies. The paper will also look into the European market and the implications of the exit of the UK from the European Union. It also identified uncertainties of the UK's current regulatory framework from the perspective of small scale self-consumer and highlighted future challenges regarding the generation and consumption of renewable energy after the exit of the UK from the European Union.

Keywords: Renewable Energy, Policy, Regulation, Smart Export Guarantee, Brexit

1. INTRODUCTION

The Energy policy plays an important part on deciding the path to follow in terms of budget from the public sector perspective and investment from the private sector. It is a dynamic and currently evolving sector due to the climate change prediction which requires an imminent change in the way we produce, store and distribute energy in order to limit the global warming to 1.5°C (Allen et al., 2018). In the case of the United Kingdom, the renewable energy strategy aims to generate 30% of its energy from renewable sources by 2020 (Government, 2009). Moreover, the current developments on the components of the energy system are looking to optimise the generation, storage, distribution and consumption (Rodrigues et al., 2018). The cost of renewable energy is a concern that is starting to recede (Liebreich, 2016), giving place to perspectives of mass production and access to this market to the public in general. This means that there is a crisis in terms of migration of technologies from carbon emission to renewables, due to its unprecedented magnitude. This crisis is reflected on today's regulatory framework for renewable energy, the current needs of new regulation and the pace at which technologies change which may not give chance to the regulatory body to act within an appropriate timeframe in order to keep up with the expectations from the market.

What this means in real terms is that there is a need to determine what regulatory tools are available for the parties in the electricity market to make use of the existent technology and what is the stimuli granted by the public policy in terms of cost and benefit to make use of them. This will also have to be contrasted with the reality, thought in terms of offer and demand of products, business models, and efficacy of the policies introduced to promote renewable energy.

Along this mutability, a further aspect must be considered: the exit of the United Kingdom from the European Union. The UK's renewable energy policy is currently guided among others by the renewable energy directive 2018/2001/EU (European Union, 2018) which entered into force in December 2018 and there is no certainty as to what will be the effect of some EU regulations over the domestic law after the departure from the European Union.

This paper will assess the United Kingdom's regulatory framework from the renewable energy perspective, starting to outline the main aims of the Energy market policy and from that point advancing through regulations within the United Kingdom which address the uptake of renewable energy.

2. EUROPEAN UNION REGULATION

According to article 194(1) of the Treaty on the Functioning of the European Union (TFEU) (European Union, 2012), one aim of the Union energy policies is to promote the renewable forms of energy.

The European Union Directive 2009/28/EC on the promotion of the use of energy from renewable sources established a framework policy regarding this type of energy (Article 1) (European Union, 2009). It sets up a target for the United Kingdom to increase the share of final consumption from renewable energy sources to 15% of the gross final consumption of energy by 2020. In addition, it ensured the adoption of policies by member states to increase this percentage over time (Article 3). The directive also facilitated and regulated the creation of joint projects with the participation of member states for the production of electricity from renewable energy sources (Article 7 and 9). Directive 2009/28/EC will be repealed from 1 July 2021 (EUR-lex, 2009).

Now, the recently issued renewable energy directive 2018/2001/EU (European Union, 2018), which entered into force in December 2018, revised the renewable energy policies taking into account that the threshold for the previous target is fast approaching and established a new binding renewable energy target for 2030. The objective of the directive is to achieve a collective target of at least 32% share of the gross final consumption from renewable energy between all the Union members (articles 1 and 3).

Crucially, Directive 2018/2001/EU (European Union, 2018) introduces regulations about individually or jointly acting Renewables self-consumers not previously regulated in Directive 2009/28, and more importantly, the electricity generated can be included in the calculation of the gross final consumption of electricity from renewable sources towards the accomplishment of the targets imposed individually to the Member state or collectively to the Union (Article 7(2)).

Regarding small-scale installations, the preamble in paragraph 17 of the directive states the following: "Small-scale installations can be of great benefit to increase public acceptance and to ensure the rollout of renewable energy projects, in particular at local level. In order to ensure participation of such small-scale installations, specific conditions, including feed-in tariffs, might therefore still be necessary to ensure a positive cost-benefit ratio, in accordance with Union law relating to the electricity market. The definition of small-scale installations for

the purposes of obtaining such support is important to provide legal certainty for investors. State aid rules contain definitions of small-scale installations" (European Union, 2018, p. 84).

Article 21 (European Union, 2018) indicates that consumers should be allowed to become self-consumers, but in addition that they, individually or through aggregates, are entitled to generate renewable energy and store and sell their excess production without being subject to discriminatory or disproportionate treatment, including network charges which are not cost-reflective (Article 21(2,a,i)). Conversely, there is a statement that they should receive remuneration for the self-generated renewable energy they feed into the grid reflecting the value of that electricity, including "long term value to the grid, environment and society" (Article 21(2, d). In addition, it clarifies that by being small-scale producers, their rights as final consumers should not be disregarded (Article 21(2, c)). The same Article specifies cases where it is appropriated to make non-discriminatory and proportionate charges and fees to renewables self-consumers:

1. When they have been supported through schemes and these fees and charges do not undermine the viability of the project;

2. After 1 December 2026, member states may argue, in case the overall share of self-consumers exceed 8% of the installed electricity capacity, that paying charges or fees to self-generated electricity constitutes a disproportionate burden on the long-term financial sustainability of the electric system;

3. If the self-generated electricity is produced in installations with a total capacity of more than 30kW.

Finally, Member States must put in place a regulatory framework to enable renewables self-consumption, removing unjustified financial or regulatory barriers and granting incentives and support schemes, but also ensuring that renewables self-consumers contribute with the overall cost sharing of the system when the electricity is fed into the grid (Article 21(6)) (European Union, 2018).

About renewable energy communities, paragraph 26 of the preamble states: "Member States should ensure that renewable energy communities can participate in available support schemes on an equal footing with large participants. To that end, Member States should be allowed to take measures, such as providing information, providing technical and financial support, reducing administrative requirements, including community-focused bidding criteria, creating tailored bidding windows for renewable energy communities, or allowing renewable energy communities to be remunerated through direct support where they comply with requirements of small installations" (European Union, 2018, p. 86)

According to article 2 "'renewable energy community' means a legal entity: (a) which, in accordance with the applicable national law, is based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity; (b) the shareholders or members of which are natural persons, SMEs or local authorities, including municipalities; (c) the primary purpose of which is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits;" (European Union, 2018, p. 103).

Concerning Renewable Energy Communities or jointly acting self-consumers, Directive 2018/2001/EU (2018) grants rights to households to participate in such schemes while maintaining their rights as final consumers and not being subject to unjustified or disproportionate barriers, as long as that participation is not their primary commercial or professional activity. They also have rights to produce, consume, store and sell renewable energy, as well as share the energy within the community or access energy markets. The Member States must provide a regulatory framework to remove unjustified or disproportionate barriers and set transparent procedures to function and facilitate transfer of energy through the distributor system operator, ensuring they contribute to the cost sharing of the system (Article 22).

3. REGULATIONS OF RENEWABLES SELF-CONSUMERS

The regulatory framework of the renewable energy policies is largely contained within the Climate Change Act 2008, the Energy Act 2008 (UK Public General Acts, 2008a), the Energy Act 2013 (UK Public General Acts, 2008b), the Energy Act 2016 (UK Public General Acts, 2013) and the renewable energy directive 2018/2001/EU (European Union, 2018) already outlined.

3.1.Climate Change Act 2008

This regulation sets up the United Kingdom's policies to measure and reduce greenhouse gas emissions.

Provision 1 of the climate change act 2008 (UK Public General Acts, 2008a) sets up the United Kingdom's target for 2050 to reduce the net carbon emissions by at least 80% compared to 1990. Following an advise by the Committee on Climate change, the target was amended by the Climate Change Act 2008 (2050 Target Amendment) Order 2019 (UK Statutory Instruments, 2019a), which made legally binding a new target to reduce in 100% the greenhouse gas emissions by 2050. It introduced a method to measure greenhouse gas emissions by setting 5 year caps or "Carbon Budgets". However, the Act does not set up specific policies or targets regarding renewable energy.

3.2.The Energy Act 2008

Renewables Obligation

This statute amends sections 32 to 32C of the Electricity Act 1989 (UK Public General Acts, 1989) which introduced the Renewables Obligation (RO). It consisted in a legal requirement imposed to electricity suppliers to supply a minimum amount of electricity from renewable sources (Section 37). This is accounted in the form of Renewable Obligation Certificates (ROCs) which are tradable instruments. The suppliers had to produce the required amount of certificates which represent the amount of renewable electricity supplied. However, as mentioned, these certificates could have been obtained through the secondary market. The RO closed for new applications on 31 March 2017.

This mechanism is oriented for big-scale renewable generators only; regarding small generators, the Energy Act 2008 (UK Public General Acts, 2008b) introduced the Feed-in Tariffs (Section 41), by allowing the authorities to grant licenses to distribute or supply energy and encourage low-carbon generation of electricity by small producers. They are defined in subsection 4 of section 41 as an "owner of plant used or intended to be used for small-scale low-carbon generation, whether or not the person is also operating or intending to operate the plant". Crucially, subsection 3 of Section 41 allows requiring the holder of a supply licence to make payments to small-scale low-carbon generators in specified circumstances.

Feed-in Tariffs

It was introduced on 1 April 2010 (UK Statutory Instruments, 2010) to promote the uptake of renewable low-carbon small-scale generation of energy. It allows payments for generation or export into the grid of renewable energy, which are made to the generators by licensed energy suppliers called FIT Licensees. The scheme is regulated in the Feed-in Tariffs Order 2012 (UK Statutory Instruments, 2012). The maximum capacity of eligible installations is 50 kilowatts (Section 3) as installations over this are eligible to receive accreditation under the ROO (Section 6). The eligible low-carbon energy source may be anaerobic digestion, hydro generating stations, combined heat and power, solar photovoltaics and wind. Community Energy Installations can also register for the Scheme (Section 11).

The installation must use MCT-FIT Technology and the generator must have a grid connection agreement with the FIT Licensee if the installation is to be connected to the grid. The tariff depends on the type of renewable energy generated for the period during which it falls and other relevant information (Section 13). The tariffs are published by the Authority before 1st of February each year regarding generation and export of renewable energy by accredited FIT installations, for the following FIT year commencing on the 1st of April and ending on the 31st of March of the following year (Section 16). The FIT payment rates must be determined by the Authority in accordance with schedule A to Standard condition 33 Of the Electricity Supply License. The FIT Licensee must take reasonable steps to review the meter readings and make payments at least quarterly during the eligibility period according to the rates determined in accordance with subsection 3.3. of the Schedule A. For example, for FIT year 1 or 2 in a Solar Photovoltaic eligible installation, the payment must be made in accordance with the FIT payment rate table in force at the time of the export or generation of energy. For FIT year 3 with tariff date from 1st April 2010 to 31St January 2013 the FIT Licensee had to follow the FIT payment rates in tables 1 and 3 of Annex 2 of the Schedule A, and so on.

Finally, Section 7 of the Schedule A specified again the obligation for the FIT Licensee to purchase FIT Export from the accredited FIT installation and make the export payments according to meter readings.

The scheme closed for new applicants on 1 April 2019, and a new scheme called Smart Export Guarantee is due to start operating in January 2020.

3.3.The Energy Act 2013

Regarding the Renewables Obligation, Section 55 (UK Public General Acts, 2013) brought an amendment to section 32L of the Electricity Act 1989, introducing a renewables obligation closure order to be made by the

secretary of State, after which no Renewables Obligation Certificates were to be issued in respect of electricity generated after a given date.

Regarding Feed-in tariffs, Section 146 (UK Public General Acts, 2013) increased the Maximum capacity of plant by small-scale low-carbon generators, from 5 megawatts to 10.

This statute also contains the Electricity Market Reform (EMR), which introduced the Contracts for Difference as the main scheme proposed by the government in replace of the Renewables Obligation, to promote low-carbon electricity generation, including renewable energy.

Contracts for Difference

According to the Financial Services and Markets Act 2000 (Regulated Activities) Order 2001/544 (UK Statutory Instruments, 2001), Contracts for Difference has the purpose of securing a profit or avoid a loss caused by fluctuations in the value or price of property or an index or other factor designed for that purpose in the contract (Section 85). In the Energy Market, they are contracts with standard terms between a CFD counterparty and an eligible generator (Sections 6(1), 7, 11 in: UK Public General Acts, 2013). Its purpose is to protect the renewables generators and the consumers from the fluctuations of the prices of energy, by establishing an indexed flat rate consisting in the difference between a "strike price" which includes the costs of investing in a low-carbon technology and the "reference price" which is the average of the market price for electricity in the energy market (BEIS, 2019). If the reference price is lower than the strike price the generator pays the difference to the CFD counterparty, whilst if the reference price is lower than the strike price, the CFD counterparty pays this difference to the generator, "this means that, provided the generator is paid close to the reference price by its offtaker, it should receive a predictable and stable revenue for its energy" (Fairley and Andrews, 2016). One of the factors that affect price is the inclusion of costs associated with the risks of purchasing renewables, and having to balance them, as this type of sources often present intermittent generation of energy (Fairley and Andrews, 2016).

3.4.The Energy Act 2016

This act is mainly concerned with the regulation of the Oil and Gas Authority Limited; however, it also includes an amendment to Part 1 of the Electricity Act 1989 with an order not to issue Renewables Obligation Certificates in respect of electricity generated after the onshore wind closure date, but excludes from this prohibition the energy generated under the circumstances described in 32LD to 32LL (UK Public General Acts, 2016).

4. THE UK'S CURRENT RENEWABLE ENERGY POLICIES

White papers are documents prepared by the Government to set out proposals for future legislation. They reflect the policies of the government in a given area of interest (UK Parliament, n.d.). Regarding energy, the UK Government produces a significant number of white papers and consultations through time which ensure that the actions taken are appropriate to meet the requirements and obligations acquired through previous policies and statutes or to update policies according to current developments in technology.

The renewable energy policies are contained within the Clean Growth Strategy and the Industrial Strategy.

The Industrial Strategy

The white paper "Industrial Strategy building Britain fit for the future" (Government, 2017a), introduced in July 2016, contains the policies regarding industry and productivity so it is relevant in terms of generation and distribution of energy, as well as the application of new technologies in the field of renewable energy in the public and private sector. For example, in terms of infrastructure, the Industrial Strategy aims to support the electric vehicles infrastructure by investing £400 Million in charging infrastructure and £100 Million to extend the plug-in car (Government, 2017, p. 15). According to this report, around 40% of the UK's total final energy use is spent in transport, therefore, the policy is focused partially in investing in innovation of low-carbon transport technologies. One of the challenges mentioned is "the Faraday Battery Challenge to design, develop and manufacture batteries for the electrification of vehicles and efficient use of renewable energy" (p. 73).

In addition, another 'grand challenge' is to promote clean growth by supporting low-cost low-carbon infrastructure systems to the service of industrial opportunities (p. 142). Therefore, one new industrial strategy programme was introduced in energy, and there will be support of innovation in low carbon economy as well as aims to increase private investment and promote market growth (p. 144). Interestingly, there is mention of a 'whole system approach' to tackle decarbonisation of energy infrastructure, and this is going to be applied in three important systems which interact constantly with each other: energy generation, transport and heat (p. 145). Some

technologies are mentioned as important synergy-makers between this three systems which will help the growth of the market, they are: energy storage, heat networks, smart meters, vehicle-to-grid and smart charging (p. 145).

Another factor to consider is the aim to minimise energy costs for households and businesses, through innovation and system efficiency. An example of this are the results obtained through innovation in the improvement of the efficiency of offshore wind energy generation (p. 147).

Clean Growth Strategy

The white paper "The Clean Growth Strategy Leading the way to a low carbon future" (Government, 2017b), was laid before parliament pursuant to Sections 12 and 14 of the Climate Change Act 2008 and amended in April 2018. It sets the strategy to achieve the target imposed in the Climate Change Act 2008 and has two objectives: the first is "To meet the domestic energy demand at the lowest possible net cost to UK taxpayers" and the second one "To maximise the social and economic benefits for the UK from this transition" (p. 10).

In order to achieve a clean growth, three challenges were identified: "1. Ensuring we deliver affordable energy for households and businesses; 2. Decarbonising "harder to reach" parts of the UK economy and 3. Establishing a post-EU emissions and environmental framework that is at least as beneficial as current arrangements". The "harder to reach" parts of economy in terms of decarbonisation are transport, business and industry, as well as heating across key sectors in the economy (p. 39). The affordability of energy was already mentioned and the Post-EU challenges are addressed further on.

Regarding renewable energy, there is a commitment to invest up to £557 million for Contracts for Difference auctions and to work with the private sector to promote the generation of offshore wind energy.

In addition, for self-consumers, a need has been identified to invest in innovation to promote the efficiency of "key technologies systems and processes" such as batteries and electric vehicles. One of the programs from the BEIS is called Energy Innovation Programme, which has funds to support clean technology to accelerate its deployment.

Smart Export Guarantee (SEG)

Now, regarding small-scale low-carbon generation, the consultation outcome "the future of small-scale low-carbon generation: Smart Export Guarantee" (BEIS, 2019) was published to set out the policy and propose secondary legislation. As a result of this consultation, a new scheme called the Smart Export Guarantee is being introduced as a mechanism to promote small-scale low-carbon generation. According to the government, the scheme was created to guarantee a payment by the suppliers to homes and businesses who generate and export energy to the grid (HM Government, 2019).

The government decided to implement the policy through secondary legislation: the Smart Export Guarantee (SEG) order 2019 (UK Statutory Instruments, 2019b). This order introduced the SEG Licensee in accordance with section 6(d) of the Electricity Act 1989 and stated the specified maximum capacity as 5 megawatts (Section 3). It also sets the functions for the Authority regarding compliance of SEG Generators of the criteria to receive SEG Payments (Section 4), and requires the Authority to publish a guidance to SEG Licensees and Generators (Section 5) as well as a report to show among others, the export tariffs that have been offered by SEG Licensees (Section 7(a)).

There is also currently a draft to modify Standard Conditions 57 and 58 of the Electricity Supply Licenses to incorporate the SGE arrangements. The draft specifies that the SEG Licensee must make SEG payments to SEG generators in accordance to Schedule A (Condition 57.3). Crucially, the provisions in Condition 57 are considered "relevant conditions" according to which non-compliance by SEG Licensee will be subject to sanctions by the Gas and Electricity Markets Authority (Condition 57.4).

As mentioned, Schedule A of the Draft to modify Conditions 57 and 58 of the Electricity Supply Licenses regulates the Payments under the Smart Export Guarantee. Section 5 of Part B of the Schedule establishes that the SEG Licensee must provide confirmation of the Export Tariff determined by the SEG Licensee in respect of the SEG Generator. The SEG Licensee has an obligation to ensure the information provided "is otherwise fair, transparent, appropriate and delivered in a professional manner…" (Section 5.3.1.(d)), and additionally, "when making SEG payments to a SEG Generator, the SEG Licensee shall ensure that it does not materially discriminate without objective justification between SEG Generators" (Section 5.3.2.).

The scheme will come into force on the 1st of January 2020.

5. EXIT OF THE UNITED KINGDOM FROM THE EUROPEAN UNION

"The exact nature of the UK's future relationship with the EU and the long-term shape of our involvement in areas like the EU Emissions Trading System are still to be determined" (Government, 2017b, p. 10) .

It has been however stated that: "There is also no need to change our domestic targets under the Act as a result of leaving the EU, as these targets are rooted in climate science. The UK remains strongly committed to the Paris Agreement and whatever the form of our future partnership with the EU we will satisfy our international obligations under the Agreement." (Government, 2017b, p. 44).

According to the Clean Growth Strategy, the government identified four areas where the EU regulations are currently operating in terms of energy and carbon emissions. Accordingly, the UK's policies are currently relying on this EU mechanisms: 1. The EU Emission Trading System (EU ETS) regarding power, heavy industry and intra EEA aviation sectors; 2. "New car and van CO2 regulations, and EU fluorinated gas quotas"; 3. "EU products policy which sets minimum standards for a range of products such as white goods and lighting, which improve energy efficiency"; and 4. Non-Energy and climate EU frameworks and policies which affect the UK, such as the Common Agricultural Policy" (p. 44 & p. 45).

It must be additionally considered that the current proposed date for the UK's departure of the European Union is the 31st of October 2019 and at the moment there is no indication of what rules will apply for the leave of the European Union and what rules will govern the future relationship with this bloc. The European Union (Withdrawal) Act 2018 (UK Public General Acts, 2018) contemplates in its section 2(1) that the EU-derived legislation with effects in domestic UK law before the date of exit, continues to have effect in domestic law. By virtue of this, EU directives implemented before the exit day, such as Directive 2018/2001/EU (European Union, 2018) will continue to have effects in domestic law. Now as has been mentioned, some mechanisms are not part of domestic law and are still being used as reference by the private sector. This would have to be incorporated into the UK's regulatory framework in order to be legally binding. Now, any agreement to leave the bloc and regulate the future relationship will have to be assessed as it may change how EU law will operate in the UK in the future.

6. DISCUSSION

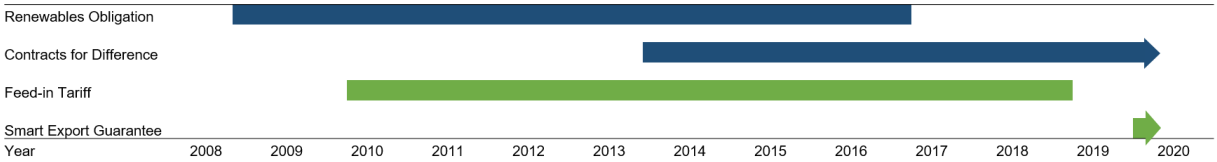
The speech given by Business Secretary Greg Clark (BEIS, 2018) "after the trilemma 4 principles for the power sector", highlights four principles that are relevant for this review of the policy and regulatory status of the UK renewable energy market: 1. *The market principle*: "we must wherever possible use market mechanisms that take full advantage of innovation and competition", 2. *The insurance principle*: "given intrinsic uncertainty about the future, government must be prepared to intervene to provide insurance and preserve optionality", 3. *The agility principle:* "energy regulation must be agile and responsive if it is to reap the great opportunities of the smart, digital economy" and 4. *No free-riding principle:* "all consumers should pay their fair share of system costs".

This review showed that the schemes for self-consumers and exporters of renewable energy, the FIT and flat rate export tariff, closed to new entrants from March 2019. This policy changed because of the "Steady fall in the cost of low-carbon generation, a move towards cost-reflective pricing, and a continued desire to minimise the costs of support schemes to consumers" (BEIS, 2019, p. 5). This suggests a sense of an unachieved target by the Feed-in Tariff, mechanism which was in the earlier stages reported of not benefitting adequately the self-consumer of energy, due to inefficiency of the business model (Muhammad-Sukki et al., 2013).

Conversely, the design of the tariff of the Smart Export Guarantee is being left for the individual supplier, as this allows flexibility and adaptation to new technologies. However, there is a concern that this freedom was also given to suppliers in the Feed-in Tariff and this eventually did not allow the business model to perform adequately, and instead the mechanism became a barrier for self-consumers contradicting the regulations in the European Directive 2018/2001/EU (European Union, 2018). It appears however, that non-compliance by the SEG Licensee in aspects relating to SEG payments to SEG generators will lead to sanctions by the authority, which may reflect an intent by the government to control and secure the retribution of the scheme. There is also a concern reflected in the policies and proposed secondary legislation to provide clear information to the SEG Generator and protect them against discrimination, which goes in line with the regulations of the European Directive 2018/2001/EU (European Union, 2018) regarding small-scale self-consumers of renewable energy.

According to this, it appears that the previous schemes (i.e. the Feed-in Tariff) did not reflect the fast-paced decrease of the costs of renewable energy for self-consumers and increasing integration of renewable energy sources to the grid due to the developments in technology. In some way, this has been compensated by introducing the Smart Export Guarantee, however, the state of the implementation of the secondary legislation and its entry into force shows a gap in the availability of schemes for small-scale low-carbon self-consumers between march 2019 and January 2020, as can be seen in Table 1.

Table 1 - Schemes for small-scale low-carbon self-consumers



As it would seem, at the moment there is no scheme or system to pay for the energy that would inevitably go into the grid from the renewable energy small-scale installation, since the Feed-in tariff closed for new applicants in March 2019 and the Smart Export Guarantee is only available from the 1st of January 2020. In addition, the SEG Licensees are obliged to provide an Export Tariff to the SEG generator before this date, however, the operation of this scheme will be unknown by the small-scale generators despite the obligation by the authority to provide guidance and reports, due to the complexity and newness of the system.

Regarding the targets to decarbonise the economy and the political circumstances of the UK and the European Union, it would seem that the United Kingdom already possess domestic regulations which set ambitious targets and has policies to achieve the proposed targets. According to the United Kingdom's Energy Statistics, 2018 & Q4 2018 (BEIS, 2019b), the share of renewable energy in the United Kingdom increased to 33.3% in 2018. Therefore, it would seem that an eventual departure of the United Kingdom from the European Union would not affect the policies and targets of renewable energy, considering it has already achieved the European proposed target and the local regulations have already included more ambitious targets.

Moreover, in the Clean Growth Strategy is stated: "Leaving the EU will not affect our statutory commitments under our own domestic Climate Change Act and indeed our domestic binding emissions reduction targets are more ambitious than those set by EU legislation" (Government, 2017b, p. 10).

7. CONCLUSION

This paper presented the current panorama of the European Union Regulation, Regulation of Renewables of Self-consumers, the UK's current renewable energy policy, and explored these policies and regulations considering the exit of United Kingdom from the European Union.

There is a need of protecting the small scale self-consumer and exporter, since new technologies represent opportunities to decentralise and make flexible the supply of energy. The pace at which technologies move offer new opportunities in terms of business models to make more affordable the renewable energy, however, the regulations do not seem to catch up on time to avoid a discriminatory treatment or the imposition of disproportionate barriers to small-scale self-consumers. The current gap in the schemes to allow payments for the uptake of renewable energy is evidence of this. Currently there is no operative scheme since the Feed-in tariff closed applications in March 2019 and the Smart Export Guarantee will only start to operate since 1 January 2020.

It was evidenced that the target to decarbonise the economy won't be affected by the exit of the United Kingdom from the European Union as the UK targets to reduce carbon emissions are aligned with the Paris Agreement. However, mechanisms on which the private sector are relying on which are not implemented in domestic law, such as the EU Emissions trading System will need to be include within the UK's legislative framework.

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