

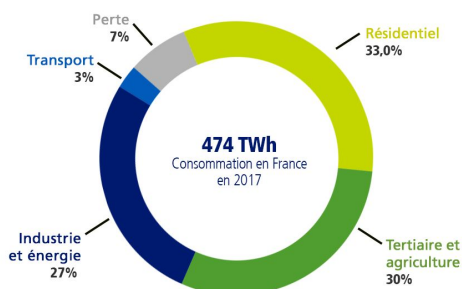
STRIM app: promoting smoother energy consumption

Estimates show that in France, a 1-degree-drop in temperature results in a rise of 2 400 MW electricity consumption. France is the most thermo-responsive country in Europe since the vast majority of heating systems are electrical as a result of fiscal initiative measures. On January 2017, the electricity consumption reached 94GW and was the 3rd highest peak ever recorded in the country. Peaks refer to massive simultaneous demand for electricity which occurs in the morning and at night, in winter and when the economic activity is high. Consumption is also linked to economic activity: for a given temperature, the consumption differs depending on whether it is a weekday, a holiday, or a weekend.



Our project hence consists in developing an application named **Strim**, that will address two main issues provoked by these peaks. First, the energy produced by nuclear power is not sufficient to meet the demand on its own. Subsequently, fossil fuels are required to produce more electricity during those spikes in demand. That is, increasing the production of nuclear power plants is not feasible, which forces providers to rely on fossil sources of energy, such as thermo central and coal power plant. The flexibility and responsiveness of those power sources enable an almost instantaneous supply of extra energy to meet the demand. Secondly, these peaks represent an issue for distribution networks. Indeed, an increasing demand creates tensions and pressure on those networks. Furthermore, sometimes the total amount of energy produced by all sources is not sufficient to meet the demand, and providers have to import electricity from neighboring countries to overcome the energy shortage.

In France, electricity represents 22,9% of total energy consumption, mainly produced by nuclear (72,3%), but also by hydraulic energy (12%), fossil fuels (8,6%) and renewables (7,1% altogether). Almost half of it is consumed by households.



La consommation d'électricité par secteurs en France en 2017
Source RTE - bilan électrique 2017 © EDF

On a global scale, it represents 18% of the total energy consumption and has increased by 340% between 1973 and 2013.

Considering this, we wanted to think of ways to reduce our reliance on fossil fuels to produce electricity. Nonetheless, the main constraint is that it is hard or costly to stock renewable energy. Because of that, it is impossible to replace fossil fuels, with renewables as the “swinging” electricity producer when facing high demand.

As a result, we focused on a solution that could influence the demand, and avoid the electricity peaks altogether: hence, our app Strim aims to promote a smoother energy consumption. We will first discuss its functionality, expected impacts and limits, as well as

assess its overall opportunity in the market. Secondly we will focus on the business strategy necessary to implement it in the long haul.

I) “Strim”, promoting a smoother energy consumption

a) Functionality

As previously discussed, energy consumption fluctuates within a day based on the levels of demands, the intensity of consumption within an area and the time period. To counter this issue, we propose a mobile application that would enable consumers to track in real-time the current intensity of consumption in their area, and provide them with advices on what time would be best to use their own home appliances. For instance, in France, the energy consumption levels are aligned with the usual working hours, which leads to a demand of energy spiking from 7pm onwards on weekdays. This stems from the large number of households being home approximately around the same time, attempting to do the same daily activities (e.g. making dinner, watching TV and so forth). Strim would work by calculating the demand of energy in real-time within the users’ geo-localised area, and push notifications to the consumers advising them to potentially wait an X amount of minutes to use a specific appliance. In other words, Strim provides the user information about how much kilowatts he/she is currently using, and compares that number to the average within the area. The user can hence check Strim to see if it is a good time to switch on the washing machine, kettle or any other appliance, or if she/he should rather wait to avoid a spike consumption. Ultimately, we are hoping to change consumers’ behaviours by reducing their consumption during peak hours, and therefore limits their negative impacts on the energy networks.

b) Market opportunity & our differentiating offer

Energy saving has been an increasingly growing field of investment in both the public and private business worlds. Estimates show that more than 55% of energy consumption is spent on heating in an average household, and 22% used by the geysers. The remaining 23 % is made of the various appliances within a household (TV, washing machine etc), whose consumption intensity depends largely on their powers, their characteristics and year of manufacturing. Hence, accurately estimating their impact on the overall energy use can present a challenge for households attempting to cut down on their costs. Subsequently, several startups (i.e. Ecojoko, Wattnow, Glow) have focused on providing consumers with the exact intensity of energy used by each appliance within one’s household. Ecojoko estimates that raising consumers’ awareness around the amount of energy used by the appliances in real-time could reduce energy consumption by as much as 25%. Those startups also provide a household with comparison data between the ongoing week and a reference week, in order to see whether their efforts to save energy are yielding results. Other actors such as the traditional institutions/providers (EDF via e.quilibre, ENGIE, RTE etc) are also nudging consumers to avoid using energy during certain time periods, mostly by giving them options to subscribe to peak hours/off-peaks contracts. In other words, households are charged significantly more for using energy during peak hours, and have reduced prices during off-peak hours. However, off-peak/peak hours differ from one town district to another, which are sometimes not well communicated to the public. In other words,

it is not always easy for the consumer to know which timeframes apply to his/her area. Furthermore, these traditional institutions are complementary with one another (i.e. one provides the national electrical network, others are providing energy to individual households), but lack an otherwise smooth and centralised user experience: subsequently, finding informations about one's consumption and its impact can be difficult and time-consuming.

As previously pointed out, whilst there is an increasing number of startups and more traditional actors in the energy saving market, none of them are directly targeting the spikes of energy consumption. They also mostly rely on a better awareness of consumers' overall energy consumption, without pinpointing the exact timeframe within which consumption has the worst impact on the environment. Furthermore, Strim can benefit both the consumers and energy providers. That is via our app, consumers can have more control over their impacts on the environment through energy saving and avoiding peaks time as precisely as possible.

c) Expected positive impact

Environmental impact

Through a smoother consumption, electrical networks would be more stable, resilient, and that would then significantly reduce risks. Secondly, smoothing the production would enable the use of more renewable energies. Indeed, a more regular consumption would promote renewable energies as a larger contributor in energy production and distribution.

Decreasing costs for energy suppliers

First of all, the energy providers can benefit from Strim since a more evened-out consumption of energy would prevent spikes in demands - and therefore lessens the pressure off the electrical networks and their energy production. Moreover, the NOME law of 2017, aiming at promoting the country's energy independence, enforces the providers' responsibility over their client's over-consumption during peaks of consumption. As of 2018, providers have limited capacity obligations: as a result, if their clients' electricity consumption exceed them during peak hours, the providers will be fined. Limiting consumption during peak hours hence represents a strong incentive for providers.

Secondly, suppliers establish the price of electricity according to the profile of the consumer (individual or professional). Indeed, the price for individuals and professionals is regulated by the Energy Regulatory Commission CRE and only EDF can market it: it is the so-called "tarif bleu", reference price. The latter has only grown since 2013. Suppliers decrease energy costs because, on the one hand, when consumers reduce their energy consumption, their bill is reduced, but it is also linked to the fall in energy prices. In addition, investments help lower the price of energy by reducing fixed and variable costs. Subsequently, electricity could become cheaper for individual households in the long run, if providers have significantly less costs related to production.

Raise awareness on environmental concerns

As previously discussed, our main impact is to reduce the reliance on fossil fuels. However, our app would also help raise consumer awareness around this matter. Indeed, we are "nudging" consumers to change their behavior in favor of the environment. As such, they become more aware of the importance of energy consumption and production on the environment.

d) Expected limits to overcome

There are various risks that can impact the quality and feasibility of our application.

The first issue we may face is that our app doesn't have a direct impact on people, but rather focuses on the environment and more particularly the electricity networks. However, for our app to generate value, we will need a certain number of users. That is, our revenue model is based on the amount of energy saved for the providers. Based on an individual's energy consumption during a peak, we identified that to have a significant impact we would need to impact at least 1% of overall consumption. We also consider that every household in France contributes to this energy consumption - 1% of household represents around 500,000 individuals. We hence need to generate at least such an amount of users. Our growth strategy must then be focused on our exposure to attract users, which we will discuss further.

The second main problem consists of political obstacles: we will surely have to face powerful lobbies preventing us from having a strong impact. Our solution indeed challenges the fossil fuels suppliers' interests since they are the ones that fulfill the needs of energy when consumption peaks occur. Reducing these spikes would therefore imply cutting back their market shares and the dominant position they hold. These actors are particularly well established corporations with great political power. To counter this issue, it will be necessary to engage with them and explain them how they can benefit from our platform beforehand. Firstly by assuring them that they will still be needed since our app won't be able to eradicate consumption peaks. Secondly, by agreeing to support us, they can start their shifts towards renewable energies.

We will also have to face an information-related obstacle : in order for our app to work, we should be able to gather electricity consumption data in real time and guarantee our access to this data. This implies to deploy public relations efforts towards electricity providers on the long run.

II. Strim Business Strategy

a) Deployment strategy and major milestones

Our overarching plan is to work hand in hand with electricity providers, whose partnership is essential to us. Firstly, when launching our app, we would focus mainly on developing a strong marketing strategy to increase our exposure. As previously discussed, users attraction is a central challenge to overcome for us to generate revenue. Therefore, we would need good incentives in order to promote the use of our app. For that, creating partnerships with energy providers would be the most efficient way to create demand and publicity around Strim, and would be one of our sources of revenues. Indeed, our exposure can be launched through the energy providers, who can provide incentives (such as a

reduction of their electricity bill if they consistently use our app) for users to consume less energy during the spikes in demand. We can also build a marketing strategy around providing gifts and rewards campaigns for the first thousands users. Later on and by working closely together, we plan to develop reward schemes for consumers using our Strim successfully. This would nudge the latter to download and use our app.

Secondly, as mentioned earlier, we would need relevant data in the early stages of our project, which we would collect thanks to providers. We would solicit energy providers such as EDF or ENGIE. While the latter save money by managing peaks in electricity consumption, we would in return ask for a share of the expected benefits they would make. The next step of our strategy would be to sell our framework, methods and expertise to energy providers. This would allow them to develop their own "in-house" app and use our savoir-faire to cater for their customers.

The final conceivable step would be to sell our finished app to RTE. The latter already has facilities used by industrials to even out energy consumption. By integrating our app to their, they would provide an exhaustive solution to over consumption of energy.

b) Return on investment analysis

The return on investment would be twofold: a return in terms of financial outcomes, and in terms of environmental impact.

Our cost expenditures is not a central issue, as we do not need a great deal of cash flow to start our app. Creating the app is fairly straightforward, which allows us to allocate most of our budget to marketing campaigns and public relations. Since our investment would not be materially consequent, our job would be to sell our idea to people. We forecasted our pricing strategy based on the savings we enable to energy providers : firstly because they would need less maintenance work on their electrical networks, and secondly because they would not need as much expensive outsourced energy to cover the needs in energy during spikes. Our revenue would then be a recurrent payment (monthly) based on the benefits made by the providers. The benefits would be calculated based on the percentage of energy saved during peak hours and number of active users.

Nonetheless, the main return on investment would be in terms of Strim's impact on the environment, as previously discussed. Indeed, we mainly offer a solution to an environmental issue - and do not necessarily consider making a financial profit a central priority. Overall, returns are therefore positive in the long term, but they strongly depend on the number of users we generate. Considering the minimal investment needed, the return on investment would be significant in the long haul.

c) Organization

Development of Strim will require to structure our start-up in three departments : the business department, the communication one and an IT department. Obviously, these departments will have to work hand in hand in order to be able to tackle issues and understand the general market situation rapidly. To allow this collaboration between departments and employees, it would be better to create an open space with separate boardrooms (at least, one by departement) for coworking session and meetings.

The keys of our business units will be our **CEO**. She/He will be in charge to drive our organization from scratch to the top. She/He will have to hold the line by supporting our project development step by step and building and maintaining our company's vision and spirit. She/He will also have to identify and tackle the main issues of the moment and to find and maintain speed by making quick decisions. Our business units will also need a **Sales Representative / Business Developer** who will work with energy suppliers, find new sales leads and assist our rapid business growth with the CEO. Concretely, our Sales Representative will be our CEO's right arm. A **secretary** will also assist the business team.

To organize this collaboration, Strim will need an experienced **General Manager and Human Resources Director** driven by team spirit. In order to concretely implicate them in Strim's success, we could focus on candidates who will be interested in Stock Option plan or in taking part in a long-term investment plan. Strim will have to rely and trust its employees and consequently to maximise their implication and their common interest in Strim's success. Our HRD will have to work with our CEO and our General Manager towards this goal.

On the IT side, a team of two **Web and Mobile Developers** will be hired in the aim to construct our app. One **Chief Technical Officer / Software Engineer** will guide and organize their work. She/He will be in charge of the creation of our app and of the coordination of the developers team. In addition, a **Creative Technologist** will help the IT team in order to be a technology evangelist, to bring its creativity to the IT team and to be a bridge between the Communication and the IT teams.

On the communication/marketing side, Strim has to be known and trusted before its launch. In this aim, Strim will recruit several employees. The first one will be the **Manager of the Communication Department**, in other words, the **Operation Manager**, who will have the heavy responsibility to manage a team of XX people and to create and sustain a team spirit among them. The operation manager will also be the **Media and Public Relation Manager** of Strim.

He/she and the HRD will hire a **Head of public relation**, who will relate with lobbys and the French administration. Second, a **Partnership Manager**, will be in charge of the Strim's relationship with electricity providers in order to permanently influence the electricity market regulation and projects. The Partnership Manager will also have to maximise the profitability of our partnerships with environmental association and electricity providers. Besides those two relationship managers, a trio of **Community Manager**, a **Customer Relationship Manager**, and a **Content Creator** will work together. While the Community manager will have to get into relation with micro-influencers, the Content Manager will be to create a video which explains our app functionment and advantages, promoted thanks to the Media and PR Manager, and shared by the Community Manager. The CRM will be in charge to answer our customers needs and interrogations. If he realizes that a recurrent problem of comprehension concerning the function of the app or its use, he will send the information to the Operation Manager, the IT team and the Business team. Thus, the three department will have to work together to tackle the issue highlighted by the CRM. Last but not least, our **graphic designer** will create our visual identity by working with IT and Business teams. She/He will create images and visuals that permit to consumer to easily identify Strim and understand its message. She/He also will support the Creative Technologist and the Content Creator in their creation.