



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 649905

Task 4.3 Business and management models



D4.4 – Germany
National Pilot Project
13/12/2017



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D4.4 – Germany

Business models

November 2017



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Summary

The aim of this document is to report on *Task 4.3: Business and management models for the Label Pack A+ platforms*. It is an elaboration of different financing and management models for the maintenance of the LPA+ platform after the project.

This report summarizes and explains the theory of platform business models and analyses the status quo of the LPA+ platform in the six project countries. It goes on to navigate the reasons why the LPA+ platform's access rates are low, finding the reasons to largely lie with the general labelling concept, and not the platform itself. It will be necessary to overcome these obstacles to guarantee that the platform can finance itself in the future. In this context Germany's role and the VdZ-tool are analyzed more closely. The VdZ-tool is considered a benchmark for labelling platforms as it's already self-financing and generates significantly higher access rates than others.

In collaboration with the national project partners (NPPs), seven financial models are identified and divided into two categories: non-traffic based and traffic-based financing models. An analysis of non-traffic based financing models shows, that there are only two options available for direct financing after the project ends. One is cooperating with SKN as part of a SCF funded project that will connect the SKN and LPA + databases with one another. The other is a provision of funding from national associations and their members. Follow up projects from the EU should be considered as well, but are unlikely to provide support immediately after the project finish. The traffic-based financing models have been narrowed down to user fees, tool embedding and market intelligence data and exclude platform advertising because it affects the LPA+ platform's bias and is considered counterproductive in achieving the package label's goal.

The user statistics demonstrate the necessity of using non-traffic based financing models as soon as the project ends. After getting initial funding, the percentage of income from non-traffic based financing models needs to rise consistently, to succeed in getting a self-financing business model.

The LPA+ platform can be managed in a centralized or decentralized manner. The platform is currently being managed centrally, as ESTIF is responsible for the maintenance of the website and Trenkner Consulting is managing the tool. The LPA+ platform is likely going to establish a database and help with implementing the label in other EU Member States. With this development pattern its centralized structure should be maintained, so that the platform can be managed time- and cost efficiently.

Finally, a financial analysis is performed using a cash-flow model to compute three different scenarios: base case, best case and worst case for the five years after the project ends. The costs for maintaining the LPA+ platform stem primarily from personnel costs. Based on the available data and the underlying assumptions, all scenarios require equity injections for the first few years to maintain the platform. The base case and worst case scenarios are shown to be non-profitable investments, whereas the best case scenario is seen to be profitable under the assumptions made.



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1. Introduction

The purpose of this document is to report on *Task 4.3: Business and management models for the Label Pack A+ platforms*. Based on the input produced by the National Stakeholders Platform (WP3), it is an elaboration of different business and financing models that can be adopted by national target countries to manage and maintain the platform after the project. It should also simultaneously provide ideas about how to finance the management of the platform in non-consortium countries.

The business models detail the potential roles of all key actors and assesses the financing and management requirements to be addressed and how to specifically address these. The goal is to have the models be self-financing, and not be “real” profit-making business models.

The work content is based on interviews carried out with the NPPs in the six project countries.

2. Theory of platform business models

In order to understand platform business models, it is important to define the terms ‘platform’ and ‘business model’. The latter is a model which defines how an organization creates, delivers, and captures value from a customer. Therefore, it should be differentiated from the concept of ‘business plans’, which is a formal description of business goals and how these can be achieved.

In this report, business models are to be developed in the context of platforms. The most commonly known definition of platforms, also used in this report, refers to a piece of software like a website or an online tool. However, there is a second, economic definition which is important for an understanding of how platforms work.

In economics, the platform itself is a business model focused on facilitating the exchange of value between user groups, between producers and consumers for example. To understand the concept of a platform as a business model, it is helpful to draw a line to other business models like for example the linear businesses. Such business models rely on the typical linear supply chain, which gives it its name. They create value in the form of goods or services and then sell them to someone down the stream of their supply chain. In order to do so, they own the means of production. Platforms however just own the means of connection. They basically bring together user groups and enable the creation of value between both by facilitating transactions.

According to its economic definition, the basic structure of every platform is made up of a value unit, a filter, the core interaction/transaction and its participants. The value unit is what participants create for others. In case of the LabelPack A+ platform it could mean the product information supplied by the manufacturers. The filter, usually some sort of interface, is the tool which helps users find the specific information they are looking for.



The core transaction is the most important part of the platform design. It is the process in which value is created for its users and turns a connection into a transaction. The platform needs its users to repeat this process constantly to generate and exchange value.

The core transaction of every platform contains four basic actions:

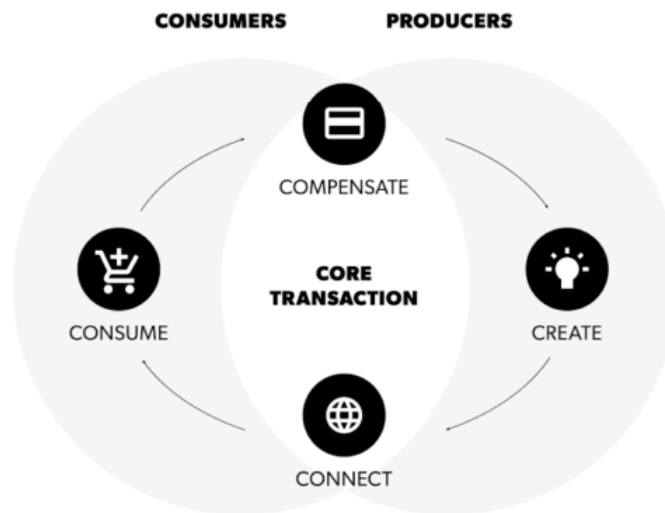


Figure 1: The four steps of the core transaction ¹

1. Create: A producer creates value and makes it available via the platform.
2. Connect: One user takes an action that connects them to that value via filter.
3. Consumer: A user consumes the value created by the producer.
4. Compensate: Consumers return value to the producer in exchange for what they consumed.

A major challenge in achieving a high repetition rate of the four basic actions, which define the core transaction, is to convince users to participate on the platform. The technology provided by the platform then helps match the users to each other or a certain value and facilitates the transaction. In addition, the platform sets standards and establishes rules among the users to build trust in the values and the quality of the services offered.

¹ <https://www.applicoinc.com/blog/what-is-a-platform-business-model/>



3. Status quo of the LPA+ platform

To effectively evaluate the potential business models for the LPA+ platform, it is important to analyse the status quo in the six project countries. Therefore, a survey was carried out and the NPPs of Italy, Portugal, Great Britain, France, Austria and Germany were interviewed. The first interviews were conducted in March 2018, to identify possible business models. Another session in August 2017 tried to evaluate the business models and their applicability to the LPA+ platform.

A representative number of the acceptance of the LPA+ platform and its coverage in different countries, is the access rate and the number of generated/downloaded labels. The following chart shows the generated and downloaded labels from the LPA+ tool for water heaters and combination heaters. It includes five of the six project countries. The German situation regarding the package label will be analysed in *chapter 3.2*. The table displays the quantity issued on the left and the aspired goal, determined at the beginning of the project, on the right:

Table 1: Labels generated and downloaded from the LPA+ tool (October 2015 – March 2017)²

Category/Country	Water heaters issued	Water heaters goal	Combination heaters issued	Combination heaters goal
Austria	1	5,200	5	2,100
France	52	4,100	36	200
Italy	46	11,800	121	400
Portugal	702	2,100	171	-
United Kingdom	26	2,600	14	100
TOTAL	866	43,400	374	11,200

In Portugal the integration of the package label into a national heat incentive led to a rise of platform access from July to November 2016. Unfortunately, the effect triggered by the incentive did not have long-term effects with regard to user access rates on the platform.

The access rates are far behind expectations in all project countries. This should be considered a consequence of the poorly conceived energy labelling concept and can just partly be blamed on the online platform.

As pointed out by the NPPs and in the SWOT analysis '*Deliverable 4.1: Package Label Implementation Assessment Report*' some substantial issues were identified which can be considered obstacles to the implementation of possible business models. This report will highlight the main obstacles and considers its solution necessary for the successful implementation of self-financing business models on the LPA+ platform.

² Label Pack A+ - "NPP report I", 2017



3.1 Obstacles

According to the concept of the labelling process the manufacturers, installers and systems designers are obliged to attach a label to all water and space heating system sold to end-consumers. The implementation of the new label can be enforced either externally by the controls of market surveillance authorities or be led by supply chain stakeholders' own intrinsic motivation.

Controlling the package label is difficult to manage and causes prohibitive costs for public authorities. In contrast to the control of white goods, water and space heating systems are custom-made and therefore often not exhibited in showrooms, where they are easily controlled. Instead, market surveillance authorities would have to conduct test purchases to control the correct application of the label. However, these controls only focus on the general application of the label and do not determine whether the category displayed on the label is correct for certain systems. Such controls require expensive measurement technology and are difficult to apply due to their high time expenditure and the minimal staff responsible for the controls.

The alternative approach focuses on the intrinsic motivation of the stakeholders in the supply chain. On the one hand, end-consumers who see the clear benefits of the label could urge installers and system designers to apply the label by demanding it in every quotation request. Currently, as consumer protection agencies have made clear, end-consumers do not fully understand the label and the benefits it entails. As a result, the label should in of itself include additional information demonstrating the benefits it has for the end-consumer. The announced rescaling of the energy efficiency categories should be implemented as well. There is currently a lack of articulation regarding the differences by the scaling parameters, which can only be found in the upper categories: A++ to B.

There are arguments however, that the installer's position should be strengthened, as they are currently in charge of the labelling process. This means additional time expenditure and legal responsibility for the printed label. To avoid bearing most of the responsibility the installers are most likely to buy factory-made systems which are labelled by the manufacturers. This strengthens the manufacturers' position in the market, big manufacturers in the heating market in particular will profit from this development. They will be able to offer water and space heating systems with self-developed labelling tools on their website in regard to their own products only. Smaller companies that have specialized products are likely to fall behind.

One way to address the issues mentioned above, is to minimize the effort made to generate the label by improving the platform and making the tool more user-friendly. This includes incorporating the SolCal methodology to avoid extra work in additional excel sheets and helping users enter correct data with information buttons. The lack of an extensive database is an issue that prevents installers from using the tool because it is too time consuming for them to insert the product fiches on their own. As mentioned, it is also important to rid installers of the legal responsibility for inserting the characteristics in the label generation process.



To successfully implement the label in the market the obstacles mentioned above, among other issues mentioned in *Deliverable 4.1*, have to be addressed fundamentally and form the basis for self-financing platform business models.

3.2 Benchmark (VdZ-tool)

The VdZ-tool was developed for professionals in Germany to calculate the package label for water and space heating systems. VdZ is an umbrella association which unites various heating and building industry associations. Initial funding for the tool was provided by the solar thermal and heating pump associations. The tool broke into the market in March 2016, since then 30,000 labels have been generated. Its successful breakthrough has led it to be considered a benchmark for energy labelling tools.

The tool can be accessed via website or the installers' inventory management systems and is free for all users. To facilitate the calculation process of the label, the tool includes the SolCal method and provides a product database for its users which is uploaded by the participating manufacturers in Germany. Manufacturers pay a yearly fee to obtain permission to upload their products to the database. There are approximately 160 companies that are currently participating and fully finance the tool with their yearly fees. Since the label is still not generally accepted by the market, the approach of the VdZ-tool is to keep the burden on installers as minimal as possible.

After launching in Germany, VdZ expanded their business to Belgium, where they offer the tool collaborating with Belgian companies. A cooperation between the LPA+ platform and the VdZ-tool was an idea initially but discarded due to high financial conditions that could not be fulfilled.



4. Financing models

The interviews conducted with the NPPs in March and August 2017 identified the following seven potential future financing models:

- 1) Funding from associations
- 2) Funding from EU follow-up project
- 3) National government funding
- 4) User fees,
- 5) Tool embedding
- 6) Platform advertising
- 7) Market intelligence data.

These options can be divided into two categories: non-traffic based funding options (1-3) which do not depend on the platform's access rates and come from institutions such as associations and national/international governments, and options that generate the necessary budget with the platform itself and therefore are traffic based as the generated budget is related to the access rates.

An EU-wide solution for the future of the LPA+ platform would be most suitable as it's a European energy label. It must, however, be considered that not all financing models can be equally applied to all project countries and that some of the options should be considered long-term not short-term solutions after the project finish and demands to overcome the aforementioned obstacles.

4.1 Non-traffic based

Non-traffic based financing models should be considered transitional funding until the EU Commission (EC) takes a clear position on the package label in Q1/2019 and until traffic based business models generate enough funds to replace them. The funds should serve to maintain the platform in the meantime and prepare for a self-financing future by resolving the stated obstacles. There are three options that can be considered in regard to non-traffic based financing:

- Funding from associations
- Funding from EU follow-up project
- National government funding

Funding from associations sustained the initial monetary requirements while the VdZ-tool was in the development phase in Germany, and it seems to be a valid option to provide budget for the first months after the project finish for the LPA+ platform. In regard to the long-term financing source, there are two main options: the first is to require associations to pay a yearly fee according to their



member size and national market potential. The feedback from NPPs about this option is not particularly positive, it's seen rather as an emergency solution that could be provided with a minimum amount of money to sustain the platform. The main problem is that most of the companies are not currently willing to support the label monetarily as the overall concept has not quite been accepted by the market and its future is uncertain. The second long-term financing option would be a cooperation with Solar Keymark Network (SKN) under the lead of the European Solar Thermal Industry Federation (ESTIF). Solar Keymark Network is the operative framework around Solar Keymark, a certificate for solar thermal products within the EU standards, and consists of certification bodies, test labs, inspectors and industry representatives. The idea behind this is an approved SCF project to connect SKN and LPA+ data. This option would enable LPA+ to apply for roughly 10,000 EUR in funding in December 2017 and SKN could support the maintenance of the platform at least for one year after the project ends. In October 2018, SKN can decide if they would be willing to take on more responsibility from the LPA+ platform. The final decision about funding approval is expected in March 2018.

Funding from EU follow-up projects could theoretically be another possible source for necessary funding to maintain and improve the platform. The package label is currently facing an uncertain future and a possible restructuring process so, until the EC makes a clear statement about how to proceed with the label it is rather pointless to define a subject for an EU-follow up project. By the time this statement will be delivered in Q1/2019, the process for a follow-up project will be too time-consuming to provide short-term funds after the project ends. For temporary financing, roughly two years after the project, the decision made by the EC should be considered an option. Public project funds in general are only granted for three years and can be extended to a maximum of five years.

The financing by national governments is not likely to happen on a project level as the package label is a European energy label and should be approached as such. A national funding option can rather be considered a marketing opportunity than a real funding. Following the example of Portugal, the energy label could be integrated into a national heat incentive and as a result receive more public attention. Unfortunately, in many countries integrating the energy label into the heat incentive is not a realistic option. Several existing heat incentives are promoting certain heating components but not the entire system. Public authorities who are responsible for the heat incentives oppose to integrate the energy label to the requirements as it is already legally binding. In addition, the number of applicants for heat incentives in many countries is already low due to too much paperwork. Support receives this position also from non-public associations because their members, manufacturers of heating system components, fear it could affect their sales figures.



4.2 Traffic based

The traffic based financial models are the ones that provide long-term self-financing solutions for the LPA+ platform. They have to proceed after the provision of transitional funding from non-traffic based financing options. Basically, there are four options:

- User fees
- Tool embedding
- Platform advertising
- Market intelligence data

All four options do not exclude one another and can be applied in combination, especially to generate sufficient funds at the beginning.

4.2.1 User fees

A business model which is often applied for platforms is a model, in which the users have to pay for the service offered to them. This means that they must register on the platform. Most of the time platforms offer different types of memberships such as free restricted accounts, pay per unit or flat rate systems.

The first option usually serves as a trial account to attract new users to the platform and provide the possibility to try the service. Then, there is the second option to register as a member who pays for every item or unit of requested service. Finally, there are users who pay a monthly or yearly fee to get unrestricted access with regard to quality and quantity of the offered service.

For the LPA+ platform, it seems difficult to differentiate between the three user groups. The first user group with free trial access seems to be necessary in order to generate more users for the platform. But a differentiation between user groups two and three is not reasonable. In the case of the second user group a pay per unit signifies a payment for every download of the generated label. User group three pays a periodic fee and is allowed to download as many labels as needed. This causes various problems, as once the energy label has been generated installers can download and use it multiple times. As installers usually work with certain suppliers the configuration and therefore the energy labels do not always differ from one another. As the value-added for the installer's business is very low only minimal amounts can be charged for each label generated on the platform. The same applies to flat rate accounts as the prices for user groups two and three must correlate.

This business model is easy to implement and therefore often applied to platforms. Currently, with little access rates and low market acceptance it would not generate enough funds and could harm the implementation of the package label rather than help it. It should, however, be considered an option for the future.



4.2.2 Tool embedding

Another financing model to generate funds is the embedding of the LPA+ tool on other websites. The tool could be offered on websites of professional associations or European distributors who would benefit from offering their users additional services. In return, they would be charged a monthly or annual fee.

It is currently unrealistic to assume that website owners would pay to embed the tool on their website. It should however, be considered a favourable marketing option to find websites that would be interested in embedding the tool for free, particularly after issues like its user-friendliness and the incorporation of the SolCal method have been addressed. When the tool has improved and market acceptance for the energy label has increased, these websites could be charged cumulative fees.

Besides being a marketing measure, it could reinforce communications with professional associations. More installers would become aware of the tool and could participate in the process of consistently improving the tool.

4.2.3 Platform advertising

The third traffic based financing model generates funds through the incorporation of advertising on the LPA+ platform. The most common method is banner advertisements. It is easy to implement, can be adjusted according to different regions and is therefore considered a valuable option on platforms throughout the web. Important factors to define the price for banner advertisements are:

- target groups
- range of users
- reach of website,
- quality of content
- variation of content
- frequency of updates.

The main target group of the LPA+ platform is installers and end-consumers. It does not seem likely that the range of users will change in the future. The content presented on the platform is objectively informative, of high quality and with low variety. The reach of the website is defined by the user access rate on the platform and as we can see later in chapter 6.1 currently very low. It is the most important factor.

Despite the fact that current user statistics are too low to generate significant incomes, platform advertising should not be considered a future financing model either. The LPA+ platform is supposed to unbiasedly inform consumers about the energy efficiency of space and water heating systems. Its users are obliged to go on the website and generate the label. Therefore, any kind of advertisement affects its bias and should be considered counterproductive to the initial intention of the package label.



4.2.4 Market intelligence data

Market intelligence data is an important factor of success for manufacturers. In general, it is information about a company's market that can be analysed to determine market strategies. In the case of LPA+, this data could include information about the time and place their components were sold and in which overall system they were integrated to. This helps manufacturers retrace their supply chain.

One of the main issues with regard to the LPA+ platform is the lack of an extensive database. It would help facilitate the label generation process and relieve installers of legal responsibility. Earlier in the project, a cooperation between the LPA+ platform and the VdZ-tool was considered to establish a connected product database. This option was later discarded because a provision of the money could not be guaranteed.

Market intelligence data is a way to avoid monetary compensation for the manufacturer's service. The value of the market intelligence data depends on its quality and quantity. This means that the more users provide data and the more extensive and precise the data is, the more value it has for the manufacturers.

The generation of labels is currently based on product data entered by the user. This means that it is only necessary to enter the product's technical specifications but not the exact product name/number. Furthermore, the number of downloaded labels cannot be directly linked to the number of sold heating systems which devalues the data. Analysing product specifications, the combinations in which they were used and where they were sold is still interesting information for manufacturers. This information could be saved in a CSV data and distributed monthly to manufacturers and other interested authorities.

With the current low user statistics, this financing model could help convince manufacturers to cooperate and provide the necessary database. When the data value increases in the future, it could even generate additional funds for the maintenance of the tool.

As already mentioned before, the overcoming of the obstacles (chapter 3.1) are indispensable to attract the manufacturer's interest. In addition, the platform needs to inform its users about any collection of market intelligence data and acquire their consent in a data protection declaration. Any kind of personal data needs to be excluded from data collection to guarantee legal credence and to maintain trust with its consumers.



4.3 Recommendation

Having presented the potential financing models, we now have to narrow down the selection to the most applicable models for the LPA+ platform. A non-traffic based financing model is required to finance the first few months/years after the project ending until the traffic based financing models can generate enough funds to replace them.

The most viable option to receive funding after the project ends is a cooperation with SKN as part of a SCF funded project for the connection of the SKN and LPA+ database. Funding from public authorities on a national or EU-wide level could just be realised on the basis of a new project. As there will be no clear decision from the EC by Q1/2018 about how to proceed with the label in general, the creation of a new project and its approval would take too much time to finance the platform immediately after the project ends. It could be a realistic option in 2019 or 2020. If a cooperation with SKN will not work or the approved funding does not cover the costs, more financing could be generated by national associations and its members. This is a rather unpopular option but should be a backup to at least maintain the platform at minimum cost if no other funds are available.

After initial funding from SKN or national associations the percentage of income from traffic based financing models needs to rise. Platform advertising should be excluded from these options because it impedes its neutrality and generates a lack of trust among its clients. It should rather focus on embedding the tool, market intelligence data and user fees. Tool embedding could be launched after the project ends when the most pressing issues, like integrating the SolCal method will be resolved and can promote the tool at no cost. Later, with potentially higher access rates, the tool could be adapted to collect market intelligence data and sell the information to manufacturers. This could lead to the incorporation of their product data in the LPA+ tool database. User fees should be the last option because they charge the installer, one of the most important stakeholders and a driving factor for the package label. If user fees are implemented too early and without the necessary value of the label for the consumer to outweigh it, it would dissuade from accepting the label and the platform.



5. Management Models

The management model defines the organizational structures in charge of managing the continuation of the LPA+ platform after the project. The term LPA+ platform, as defined before, includes two main management fields that need to be resolved: the LPA+ website and the LPA+ tool. The website is currently available for the six project countries and the tool in the five project languages. All of these need to be maintained, updated and in the best case consistently improved.

The project requires developed data to be provided within the project for at least three years after the project is finished. For this period, the national stakeholders are obliged to maintain the LPA+ platform online available and should strive to offer the best possible service to the platform user within a self-financing model. This can only be achieved with clear management structures that generate low costs. As it is not aimed at commercial use and exact budget coverage is usually not achieved, the managing institutions should be able to shift cost surpluses and deficits from one year to another.

During the project, the LPA+ platform was managed by BSW, ESTIF and Trenkner Consulting. After the development and initial maintenance by BSW, ESTIF was responsible for the website. Trenkner Consulting is in charge of the development and maintenance of the tool. The content of the national websites was provided by the associations. In general, the websites are similar in structure and differ only slightly between countries. The tools are identical and vary only in regard to the national languages. The only exception is Germany, where the user is directly linked to the VdZ-tool instead of a German version of the LPA+ tool. The current model is considered to be a centralized management approach.

In the case of not agreeing to a common financing model, an alternative option could be a decentralized management model in which the national associations would be in charge of the management and maintenance of their website and tools. As we are dealing with a European energy label, this option should be avoided to reduce costs, effort and maintain uniformity between the countries. In the future, the tool is likely to be implemented in more European countries. A united European solution with centralized structures would facilitate the integration of new participating countries.

Centralized structures are even more important in regard to a future database of the LPA+ tool. The characteristics of the product data are currently manually entered by the users of the platform. To succeed better the LPA+ platform must facilitate the process of label generation and its legal responsibility.

Addressing this issue independently, associations could ask their members for their product information and send it to registered users of the LPA+ platform. The latter would still have to type in the data and assume legal responsibility but at least they would not have to do the research for the product data themselves. Anyways, it leads to a preferential standing for members of the project



associations. The user of the LPA+ platform would as a result just be supplied with information from national manufacturers. This leads to less extensive national databases which are more time-consuming to manage than a centralized database.

In a centralized management system, there are three approaches to manage the database.

As already mentioned in *chapter 4.2.4*, market intelligence data is important for manufacturers to be able to retrace their supply chain and make strategic decisions. In negotiations, manufacturers could be convinced to provide their product data in exchange for market intelligence data about where, when and in which combination their products are sold.

The EU is planning to initialize an EU-wide database in 2019. Manufacturers will be obliged to disclose product sheets for every new product released and these will be integrated into the database. It seems likely that this database will provide the most extensive information on solar/heating components, but it cannot yet be predicted how fast and successful the implementation will work.

For the time being SKN is valuable with its extensive database on solar thermal products that can be connected to the LPA+ tool. Surely it would only provide a small part of the necessary information to generate the label but it is a step in the right direction until other solutions are available. It should be examined which technical difficulties could arise from the integration of the SKN database.

In summary, it can be said that a centralized approach is a more time and cost-efficient solution which provides the necessary structures for an extensive database and will give the label greater bargaining when negotiating with stakeholders or new member states who want to join the platform.



6. Financial analysis

A financial analysis of the selected financing models was prepared with the data available and rough estimates projecting the upcoming five years after the project finishes in March 2018. It includes an analysis of the user access rates, costs and a cash flow-model.

6.1 User statistics

The financing models were classified by traffic-based and non-traffic based models. For a general financial analysis and especially for the traffic-based financing models, it is important to consider the latest access rates on the LPA+ platform. The following graph shows the total monthly access rates (red) and the monthly overall access rates in the project countries (blue). For a more detailed distinction of the user statistics, the bar chart illustrates the monthly access rates per country.

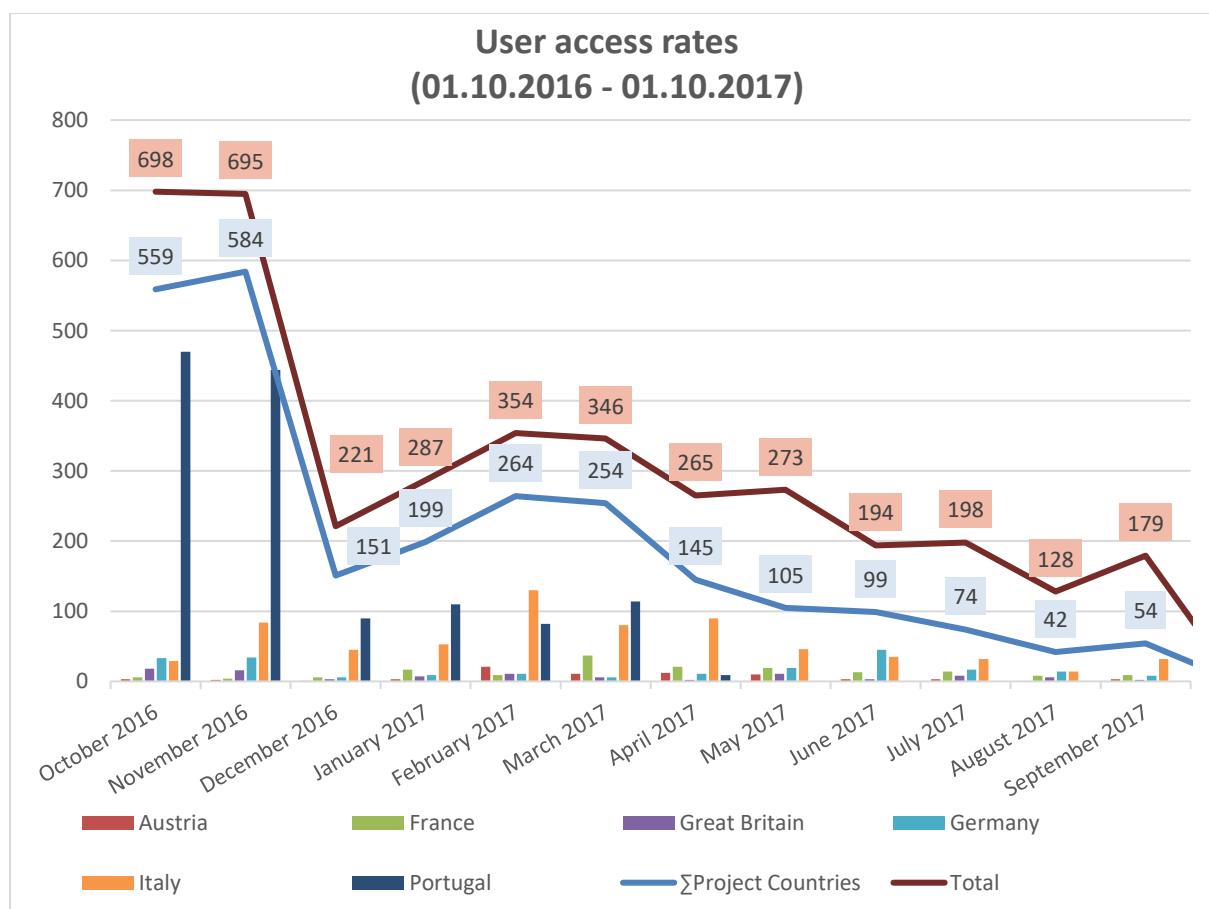


Figure 2: User access rates (01.10.2016 - 01.10.2017)³

³ Piwik: User access rates



The highest access rates were registered in October and November 2016 and are mainly based on the high access rates in Portugal. Between July and November 2016, the Energy Efficiency Fund in Portugal opened a heat incentive supporting the acquisition of new water heating systems which required the presentation of the package label. This could raise professionals' and consumers' attention and lead to increasing user access rates. After the incentive's end, the positive effect could not be entirely maintained and access rates dropped significantly.

A total of 3,838 users visited the LPA+ platform in the period between the 1st of October 2016 and 1st of October 2017 in which 2,530 visitors came from one of the project countries. The user visits from outside the participating project countries come from 67 different countries. Its three main contributors are the Czech Republic (136), Belgium (114) and the United States (85).

In comparison, the VdZ-tool achieved a total of 730,282 visitors in the same time period. The following table shows the monthly distribution:

Table 2: User access rates VdZ-tool (10/2016 – 10/2017)

Month	Oct 16	Nov 16	Dec 16	Jan 17	Feb 17	Mar 17
Access rates	30,323	20,122	22,094	61,392	67,487	44,914
Month	Apr 17	May 17	June 17	July 17	Aug 17	Sep 17
Access rates	71,590	92,584	99,921	69,160	69,767	80,928

The difference in user access between the VdZ-tool, which only operates in Germany and Belgium and the LPA+ tool, which is offered in six countries, is tremendous. The reasons for the big gap in user access rates between both tools must be analysed and show the existing market potential for the future.

6.2 Costs

The costs of the LPA+ platform are generated by the maintenance of the website and the tool and any possible future adjustments that need to be made in preparation for generating funds through financing models. Estimations made regarding the workload and costs are based on conversations with ESTIF, BSW Solar and Trenkner Consulting, who are currently or were formerly responsible for the LPA+ platform.



The annual maintenance costs for the website are comprised by payments for the domain, hosting, IT administration and the editorial work by the national associations. All expenses are based on calculations with an hourly rate of 60 EUR. The cost positions are as follows:

Table 3: Yearly maintenance cost for LPA+ platform

Categories	Hosting	Domain	IT administration	Editorial work	Tool maintenance	Total
Hours/month	-	-	20	24	4	-
Hourly rate [€/h]	-	-	60 €	60 €	60 €	-
Yearly costs [€]	120 €	40 €	14,440 €	17,280 €	2,880 €	34,720 €

For the maintenance of the tool, it is necessary to conduct daily server backups and constant software updates. With the integration of a possible database for the tool, the workload will probably rise due to database maintenance and updates.

In addition, it is necessary to adjust the tool for the implementation of the proposed financing models. This includes changes to the front end of the tool for the embedding on other websites and the incorporation of additional functions for the generation of market intelligence data as well as the differentiation between different user groups. These adjustments are roughly estimated with their correspondent workload in the table below:

Table 4: Costs for adjustments of the tool

Categories	Tool embedding	Market intelligence data	User fees
Hours	4	8	16
Hourly rate [€/h]	60 €	60 €	60 €
Costs [€]	240 €	480 €	960 €



The costs calculated for market intelligence data and user fees are one-off costs whereas the tool embedding expenses are costs per unit.

6.3 Cash-flow

A cash-flow model provides information about the solvency of a business and helps manage it in a proactive way. Predictions about the future always rely on the present available data and the underlying assumptions for extrapolations.

The following charts estimate the cash-flow for the LPA+ platform for the upcoming five years from March 2018 until the end of 2022. Due to the minimal data available on costs and incomes, the cash-flow model is highly speculative and depends on unforeseeable future decisions by the EC.

The cash-flow model was calculated for three different scenarios varying the underlying assumptions: base case, best case and worst case.

Attached to this report, an Excel data file is provided for the better understanding of the model and the possibility for future changes.

6.3.1 Base case

The base case scenario refers to an analysis of the most likely or preferred set of assumptions. Its cost assumptions are based on the cost positions in *chapter 6.2* represented by the sub-categories '*maintenance website*', '*maintenance tool*' and '*adjustments to the platform*' in the cash-flow table below.



Table 5: Cash-flow table (2018 – 2022) - Base case scenario

Category/Year	Sub-category	2018 (03/18)	2019	2020	2021	2022
Income 1	Non-traffic based funding from SCF project	8.333,33 €	1.666,67 €	- €	- €	- €
Income 2	Tool embedding	- €	- €	3.600,00 €	4.680,00 €	6.120,00 €
Income 3	User fees	- €	- €	12.000,00 €	24.000,00 €	48.000,00 €
Income 4	Market Intelligence Data	- €	500,00 €	1.000,00 €	2.000,00 €	4.000,00 €
	Sum Income	8.333,33 €	2.166,67 €	16.600,00 €	30.680,00 €	58.120,00 €
Cost 1	Maintenance website	26.533,33 €	31.840,00 €	31.840,00 €	31.840,00 €	31.840,00 €
Cost 2	Maintenance tool	2.400,00 €	2.880,00 €	2.880,00 €	2.880,00 €	2.880,00 €
Cost 3	Adjustments to the platform	1.920,00 €	1.440,00 €	480,00 €	720,00 €	960,00 €
	Sum costs	- 30.853,33 €	- 36.160,00 €	- 35.200,00 €	- 35.440,00 €	- 35.680,00 €
	Starting Balance	- €	- €	- €	- €	- €
	Cost/Income Balance	- 22.520,00 €	- 33.993,33 €	- 18.600,00 €	- 4.760,00 €	22.440,00 €
	Equity Transfer	22.520,00 €	33.993,33 €	18.600,00 €	4.760,00 €	- 22.440,00 €
	Closing Balance	- €	- €	- €	- €	- €
	Interest Rate	1,5%				
	Net Present Value	-56.625,35 €				

The income comprises of four positions that can be divided into non-traffic based and traffic based financing models. The non-traffic based financing comes from the SCF project to incorporate the SKN database and covers the first 12 months after the project ends until March 2019.

During this time money will be invested into the improvement of the tool, into realizing tool embedding for promotional purposes and to adjusting it for the collection of market intelligence data. In the first two years, tool embedding is offered for free on other websites, afterwards it will be charged a monthly fee of 30 EUR. Market intelligence data will be generated by Q2/2018 and provided to manufacturers in exchange for the supply of product data for the tool's database. In the case that manufacturers should not be interested in cooperating, they will be approached again in 2019, when the tool becomes more useful to its users supported by the EU product database, making it more attractive to manufacturers. The manufacturers will be charged for the supply of market intelligence data and the number of interested manufacturers is expected to rise throughout the upcoming years. Due to the limited reference data available, the estimated incomes for market intelligence data is highly speculative.

The provided database and conceptual changes to the label are expected to trigger higher user interest in the tool. It is assumed that by 2020 user's interest will be sufficiently stable to restrict the access and charge users a 10 EUR/month flatrate fee to use the LPA+ tool. Throughout the years, the fee will remain constant but the number of users is expected to rise to 400 registered users in 2022.

Figure 2 shows that the cost/income balance will remain negative until 2022. Therefore, the negative cash-flow in the first four years needs to be compensated through equity. The equity sum required is 79,113.35 EUR in four years. However, the majority of the costs is generated by personnel costs and is



therefore adjustable. Only editorial work on the website accounts for 83,250 EUR throughout the five years.

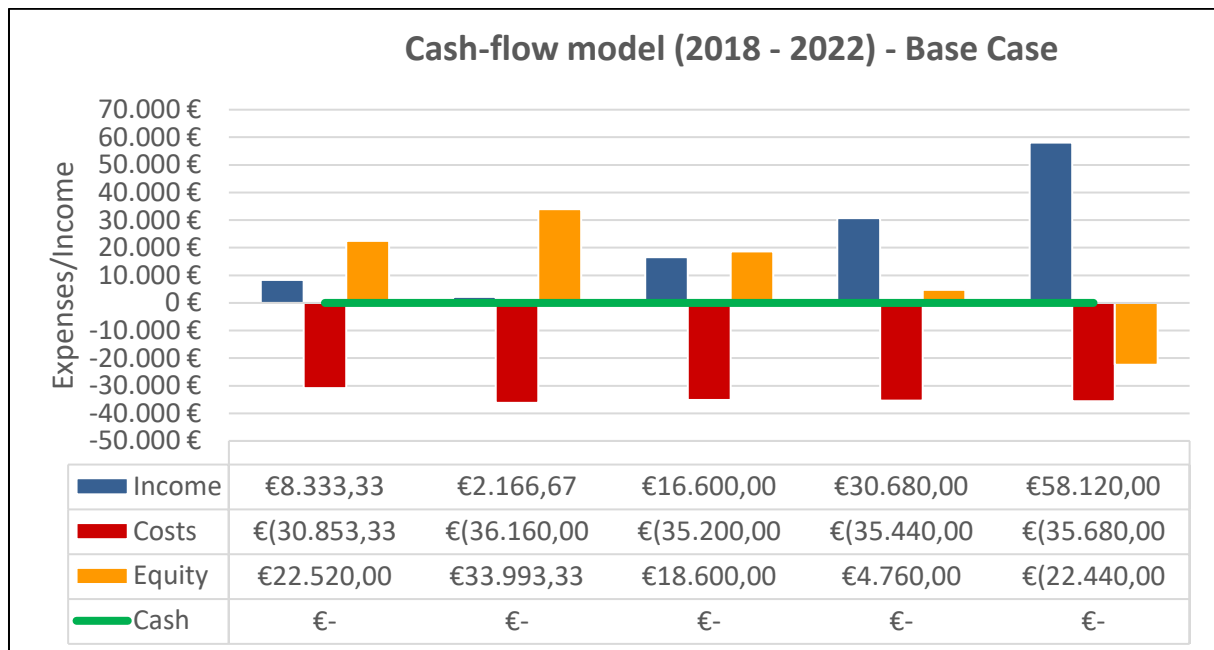


Figure 3: Cash-flow graph (2018 – 2022) – Base case scenario

In 2022 the amount of income will exceed costs for the first time, making a positive balance of 22,440 EUR. This is the result of the growing income generated by user fees, as the costs remain almost the same throughout the years. Due to the negative equity balance, the income surplus will immediately be transferred to the equity account to pay back sums of the cash provided. The balance is projected to be -57,433.33 EUR in 2022. Assuming that the interest rate is equal to the European inflation rate (July 2017) 1.5 %⁴, the Net Present Value (NPV) will be - 56,625.35 EUR. Therefore the LPA+ platform can be considered a non-profitable investment for the first five years after the project end. Nevertheless, the yearly upward trend shows potential for a long-term future of the LPA+ platform based on the underlying assumptions.

6.3.2 Best case

The best case scenario refers to an analysis with a highly optimistic set of assumptions. Compared to the base case scenario, its cost assumptions differ only in the sub-category '*adjustments to the platform*' due to a higher workload for tool embedding.

⁴ <https://de.statista.com/statistik/daten/studie/252059/umfrage/inflationsrate-in-der-eu-nach-monaten/>



Table 6: Cash-flow table (2018 – 2022) - Best case scenario

Category/Year	Sub-category	2018 (03/18)	2019	2020	2021	2022
Income 1	Non-traffic based funding from SCF project	8.333,33 €	1.666,67 €	- €	- €	- €
Income 2	Tool embedding	- €	3.240,00 €	5.040,00 €	7.560,00 €	11.520,00 €
Income 3	User fees	- €	6.000,00 €	15.000,00 €	37.560,00 €	93.960,00 €
Income 4	Market Intelligence Data	- €	2.000,00 €	4.000,00 €	8.000,00 €	16.000,00 €
	Sum Income	8.333,33 €	12.906,67 €	24.040,00 €	53.120,00 €	121.480,00 €
Cost 1	Maintenance website	26.533,33 €	31.840,00 €	31.840,00 €	31.840,00 €	31.840,00 €
Cost 2	Maintenance tool	2.400,00 €	2.880,00 €	2.880,00 €	2.880,00 €	2.880,00 €
Cost 3	Adjustments to the platform	1.920,00 €	1.680,00 €	1.200,00 €	1.680,00 €	2.640,00 €
	Sum costs	- 30.853,33 €	- 36.400,00 €	- 35.920,00 €	- 36.400,00 €	- 37.360,00 €
	Starting Balance	- €	- €	- €	- €	- €
	Cost/Income Balance	- 22.520,00 €	- 23.493,33 €	- 11.880,00 €	16.720,00 €	84.120,00 €
	Equity Transfer	22.520,00 €	23.493,33 €	11.880,00 €	16.720,00 €	40.173,33 €
	Closing Balance	- €	- €	- €	- €	43.946,67 €
	Interest Rate	1,5%				
	Net Present Value	37.486,26 €				

The income is expected to be higher than in the base case scenario. In the first year after the project, non-traffic based funding will be provided by the SCF project with a total of 10,000 EUR.

While the user fees remain the same as in the base case scenario, the fees will be implemented a year earlier, in 2019. It assumes a rapid establishment of the EU Commission database and a consequently fast-growing interest in the LPA+ platform. Not only because of easier label generation but also for the straight data access. By 2022 the LPA+ platform is expected to have almost 800 registered users and generate the major portion of the income.

With higher numbers of users compared to the base case scenario, market intelligence data will be sold for the first time in 2019 with a revenue of 2,000 EUR. Due to constantly improving market intelligence database, companies' interest is expected to rise and income reaches 16,000 EUR in 2022.

In 2018 embedding the tool will be provided to six webpages for promotional activities only. At the beginning of 2019, fees of 30 EUR will be charged for the first time and remain constant throughout the years whereas the number of interested websites will increase by 50 % every year.

For the best case scenario, the first three years after the project ends are also expected to have a negative balance due to minimal income. This deficit needs to be compensated by equity provided by associations totalling 57,893.33 EUR. In 2020, the income/cost balance should be positive for the first time. As a result, the 16,720 EUR in profits will be paid back to the equity supplier.

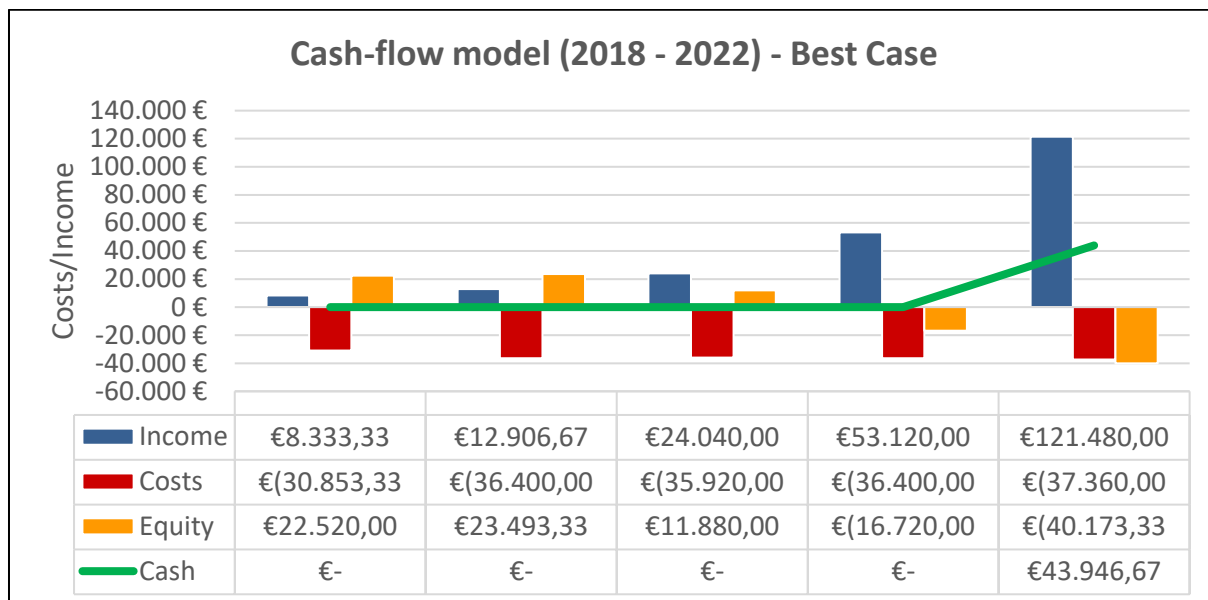


Figure 4: Cash-flow graph (2018 – 2022) - Best case scenario

The last year shows a steep rise in income mainly caused by the increasing number of registered users on the platform. As a result, the provided equity is fully paid back and a positive cash-flow of 43,946.67 EUR is created. The biggest source of income is the user fees with an amount of 152,520 EUR throughout the five-year period. The project investment results profitable with an NPV of 37,486.26 EUR based on an interest rate of 1.5 %. However, the underlying assumptions are highly optimistic and relatively unlikely to occur.

6.3.3 Worst case

The worst case scenario refers to an analysis with a highly pessimistic set of assumptions. Compared to the base case scenario, its cost assumptions differ significantly. All personnel costs for the maintenance of the LPA+ website are reduced dividing the monthly workload in half. The workload for IT administration (website) is calculated with 10 hours/month, the editorial work for all six countries results 12 hours/month.



Table 7: Cash-flow table (2018 – 2022) - Worst case scenario

Category/Year	Sub-category	2018 (03/18)	2019	2020	2021 (03/21)	2022
Income 1	Non-traffic based funding from SCF project	- €	- €	- €	- €	- €
Income 2	Tool embedding	- €	- €	- €	- €	- €
Income 3	User fees	- €	- €	- €	- €	- €
Income 4	Market Intelligence Data	- €	- €	- €	- €	- €
	Sum Income	- €	- €	- €	- €	- €
Cost 1	Maintenance website	13.333,33 €	16.000,00 €	16.000,00 €	2.666,67 €	- €
Cost 2	Maintenance tool	2.400,00 €	2.880,00 €	2.880,00 €	480,00 €	- €
Cost 3	Adjustments to the platform	- €	- €	- €	- €	- €
	Sum costs	- 15.733,33 €	- 18.880,00 €	- 18.880,00 €	- 3.146,67 €	- €
	Starting Balance	- €	- €	- €	- €	- €
	Cost/Income Balance	- 15.733,33 €	- 18.880,00 €	- 18.880,00 €	- 3.146,67 €	- €
	Equity Transfer	15.733,33 €	18.880,00 €	18.880,00 €	3.146,67 €	- €
	Closing Balance	- €	- €	- €	- €	- €
	Interest Rate	1,5%				
	Net Present Value	-54.846,92 €				

There are no investments in the adjustment of the LPA+ tool due to the label's uncertain future and high investment risks. As a result, none of the formerly presented financing models can be implemented. With little market acceptance and no reinforced controls by market surveillance authorities, user's interest in the package label will not increase. Therefore, websites will not be willing to pay to embed the tool or pay fees to use the tool. In addition, the collection of market intelligence data is not a valuable option without sufficient users on the platform.

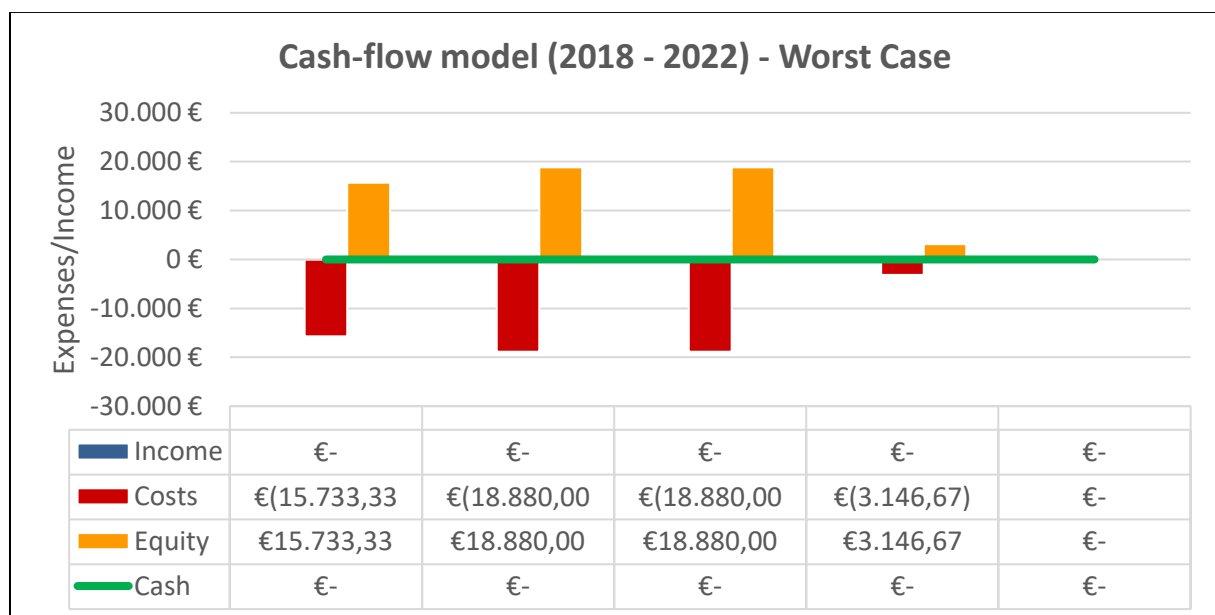


Figure 5: Cash-flow graph (2018 – 2022) - Worst case scenario



Figure 4 shows that there will not be any income-generation between 2018 and 2022. At the same time, costs will be reduced but cannot be set to zero. This will create constant losses and will require an equity provision of 56,640 EUR.

Based on an interest rate of 1.5 %, the NPV results -54,846.92 EUR. After three years of losses and the fulfillment of the contractual obligation the LPA+ platform will be shut down. Although it is the least desired scenario of all, its probability of occurrence is high, if there are no fundamental changes to the LPA+ platform.



7. Conclusion

Having analysed the status quo of the LPA+ platform it's clear that the access rates are behind their expected trajectories. The reasons for this are primarily due to the general labelling concept and just partly due to the online platform. The main obstacles were analysed and its solution considered to be a basic condition to successfully implement self-financing business models. The benchmark of a successful labelling tool is the VdZ-tool, however a cooperation that was intended at the beginning of the project was later discarded due to the high financial costs that could not be fulfilled.

With the help of the NPPs, seven financing models were identified and categorized into traffic-based and non-traffic based models. However, an analysis of the non-traffic based financing models shows that there are only two reasonable possibilities for immediate funding after the project finishes. The first option is to cooperate with SKN as part of a SCF-funded project, incorporating the SKN data to the LPA + database. The second, would be funding from national associations with the help of their members. Another possibility is an EU follow-up project, but it's unlikely to provide instant support after the project is completed. The traffic-related funding models are limited to user fees, tool embedding and market Intelligence data. Platform advertising is excluded from the financing models because it affects its neutrality and is therefore considered counterproductive to the initial idea of the package label. Tool embedding could be used to promote the tool at minimal cost, before charging fees in the subsequent years. Market intelligence data can be collected and provided to manufacturers in exchange for the establishment of a database or monetary compensation. The implementation of user fees is a critical decision. It requires good timing, because they charge installers, who are the most important stakeholders and a driving factor in favour of the package label. Early introduction, without offering counter-performance through the tool would have a negative effect on the acceptance of the label and the platform.

The management of the LPA+ platform can be addressed in a centralized or decentralized way. Currently, the platform is managed centrally: ESTIF is responsible for the maintenance of the website and Trenkner Consulting manages the tool. The editorial work for the website is done by the national associations. The LPA+ platform is likely going to establish a database and help with implementing the label in other EU Member States. Having this in mind, it's recommended that centralized structures remain in place to manage the platform time and cost effectively.

A closer look at current user statistics demonstrates that transitional funding from non-traffic based financing models is necessary immediately after the project ends before the percentage of income from traffic-based funding plays an important factor. It is necessary to base income generation on several financing models simultaneously because a single model cannot cover the costs. The costs can be factored by the following: cost for maintenance of the website, maintenance of the tool and adjustments to the tool. These are necessary to prepare the tool for the generation of funds through the proposed financing models.



A financial analysis was performed using a cash flow model to calculate three different scenarios (base case, best case and worst case) for the five years after the project finishes. Based on the available data and underlying assumptions, all scenarios will require supplies in equity for the first few years to maintain the platform. The base case and the worst case scenarios show non-profitable investments whereas the best case scenario is profitable under the assumptions made. Consequently, only in the best case scenario will the equity provided be able to be paid back completely within the five-year period. Projections show that a positive cash-flow will be made in the last year. In the base case scenario, the incomes show an upward trend and a positive income/cost balance in the fifth year which shows potential for a long-term future of the LPA+ platform. In the worst case scenario, no income is generated and costs are reduced to a minimum. Nevertheless, constant losses would lead to the shutdown of the LPA+ platform after three years.

To avoid the worst case scenario and strive for the base case scenario it will be necessary to make conceptual changes in regard to the package label and to successfully include important stakeholders in the process. The improvement of the user access rates is crucial for the success of the financing models and cannot simply be achieved by promotional activities. It needs to be backed up by a package label which provides benefits for all stakeholders involved. The most challenging part after the completion of the project will be to find a source of equity ready to make the adjustments necessary so that the tool can self-finance itself in the future.