



European Construction Sector Observatory

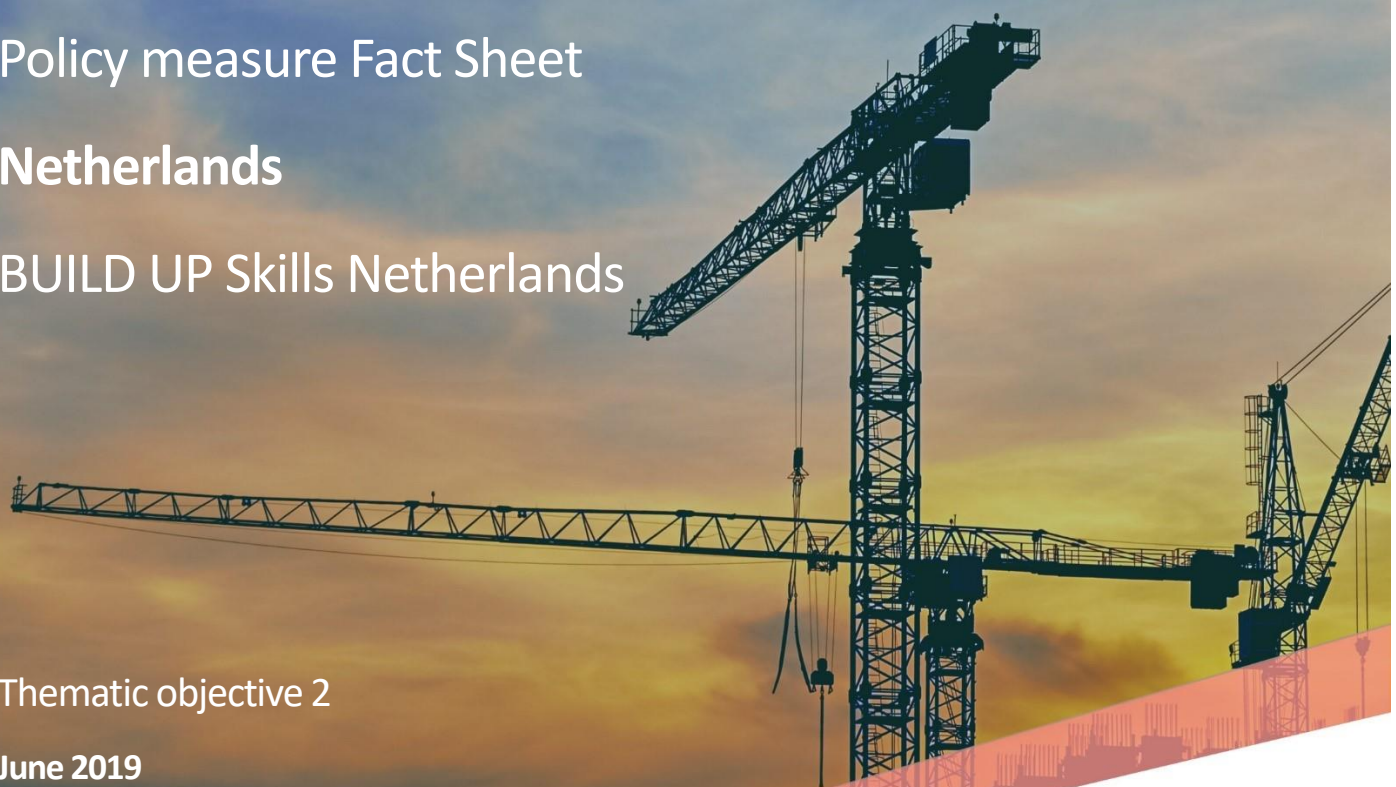
Policy measure Fact Sheet

Netherlands

BUILD UP Skills Netherlands

Thematic objective 2

June 2019



In a nutshell

Implementing body	Consortium: OTIB, Kenteq, Fundeon, Hibin, SBR, ISSO, MBO
Key features & objectives	Created with the objective of meeting the European standards for the use of renewable energy in the built environment, BUSNL aimed at increasing the knowledge and skills of professionals in the construction and installation sector.
Implementation date	2011-2013: DUBUS (Pillar I) 2013-2015: BUS_N@W (Pillar II) 2015-2018: BUStoB (Follow-Up)
Targeted beneficiaries	Roofers; electrical installers (energy infrastructure); bricklayers; insulation installers; plasterer etc. ¹
Targeted sub-sectors	All sub-sectors (e.g. residential, commercial and industrial)
Budget (EUR)	602,096 (DUBUS, 75% EU Funded) 673,632 (BUS N@W, 90% EU Funded) 1,385,775 (BUStoB: 100% EU funded)
Good practice	★★★★☆
Transferability	★★★★☆

The Netherlands pursues an active energy policy on both the supply and demand side with the long-term ambition of becoming a circular economy. This activism has led to the adoption of a series of initiatives, agreements and covenants, such as the ‘Spring Agreement’² and the ‘More with Less’ (Meer met Minder)³ initiative. A common aim of these programmes is to achieve or surpass European Construction 2020 objectives.

Construction 2020 objectives are also at the heart of the strategic BUILD UP Skills (BUS) initiative, which

is part of the Intelligent Energy Europe programme and aims to increase the number of qualified workers across Europe to deliver building renovations which offer high energy performance, as well as new ‘nearly zero energy buildings’ (NZEB).

BUILD UP Skills Netherlands (BUSNL) is the Dutch component of the European BUS initiative.

To maximise its impact and value to the construction industry, the BUSNL consortium brought together stakeholders from both the installation and construction sides of the industry⁴.

BUSNL began (Pillar I) by assessing the energy efficiency (EE) skills challenges facing the Dutch construction sector and by defining solutions and a roadmap to upskill the workforce. Pillar II then focused on implementing the roadmap, covering training infrastructure development (training methods, schemes, content, materials, etc.), training implementation and evaluation. Pillar II also developed several add-ons to complement the existing curriculum, including EE training for teachers, pilot training for a first batch of workers and the creation of a qualification structure allowing for HR-advice and professional orientation⁵. A follow-up programme was then launched at the end of Pillar II. It aimed to complete the work of Pillars I & II by focusing on building regional capacities, developing e-training modules and conducting regional pilots⁶.

Overall, BUSNL has successfully updated the training infrastructure and National Qualification Platform for construction workers with new EE training and qualification components. Furthermore, some partners in the programme participated in the creation of the PROF/TRAC platform, contributing to spread the gained knowledge across the country’s border⁷.

However, the programme fell short of achieving its main objective. The original aim was to upskill at least 50,000 Dutch construction workers, but the actual number trained at the end of the initiative was 10,000, which equates to a 20% success rate. Although the BUSNL secretary views the participation numbers as disappointing, it is important to stress that the training foundations are

developed and ready for roll-out. The key barrier is low market demand for EE installations and construction. Additional measures are needed to

stimulate demand for EE and incentivise participation in EE training⁸.

1.

General description

BUSNL is the Dutch component of the European Build Up Skills programme, which aims to upskill construction workers in the field of Energy Efficiency (EE)⁹. Launched in 2011 by a consortium of private and public sector organisations, the objective of BUSNL was to foster the development of a workforce able to build (near) zero energy buildings and meet the 2020 objectives in the built environment¹⁰.

BUSNL was composed of three separate, sequential and interdependent sub-programmes:



DUBUS (2011-2013) was the foundational part of the BUSNL programme. It was a two-year project that created the National Qualification Platform by using an integrated approach. This gave stakeholders the opportunity to participate in defining the problems and solutions that were subsequently mapped out in two key reports:

- The Status-Quo Analysis Report¹¹ identified the main challenges facing the Dutch construction industry. It sought to clarify problems such as the lack of qualified professors, gaps in vocational training (e.g.: lack of training available for wind energy or sun blocking window specialists, or roof mechanics), and the need to increase the number of workers with EE skills¹²;
- The National Roadmap¹³ identified and mapped out solutions to those challenges and defined an implementation plan. The main propositions were to:
 - Complete the existing training system;
 - ‘Train the Trainers’ on EE in construction;
 - Update construction sector job profiles to link them with new qualifications that relate to EE technologies;
 - Increase the skill levels of construction workers;

- Improve the post-initial training structure to allow for professional orientation¹⁴.

BUS_N@W (2013-2015) was the second sub-programme and was designed to implement the solutions mapped out in the National Roadmap. Its objectives were to¹⁵:

- Develop and implement the official accreditation and endorsement of the existing post-initial training schemes;
- Source EUR 1 million in additional funding;
- Assure the continuity of the post-initial training scheme and the National Qualification Platform;
- Monitor BUSNL progress and results¹⁶;
- Develop new EE-related qualifications, as shown in Table 1, in line with the National Roadmap and the updated job profiles;
- Develop interdisciplinary training schemes (which go beyond the traditional division of work across professions, for example, better integration of installation and construction works);
- Develop and implement ‘train the trainer’ schemes;
- Integrate schemes into the traditional curriculum¹⁷.

Table 1: New qualifications developed under BUS_N@W

Profession	New qualification(s)
Glazier	Specialist sun blocking window film
Roofer	Green roof specialist
E-installations mechanic	Sustainable lighting specialist, "domotica" specialist, power quality specialist and energy monitoring specialist
Roof mechanic	Wind energy specialist
Engineering installations mechanic	Energy generation specialist
Engineering installations service mechanic	Energy generation specialist and energy monitoring specialist
Cooling installations mechanic	High-temperature cooling (HTK) specialist
Cooling installations service mechanic	High-temperature cooling (HTK) specialist

Source: National Roadmap¹⁸

In quantitative terms, BUS_N@W set the ambitious target of training 50,000 to 70,000 workers by 2015 and 150,000 to 200,000 by 2020¹⁹.

BUSToB (2015-2018) was launched as a follow-up programme to BUS_N@W. This is partly due to the disappointing results of that programme, which did not upskill as many construction workers as expected. BUSToB was therefore designed to address the gaps identified in BUSN@W and DUBUS: to develop regional capacities, increase blue-collar participation and develop e-training modules²⁰.

According to the project secretary, the main reasons behind the launch of this follow-on programme

were firstly that BUSN@W had not attracted enough blue-collar workers and secondly that there was still a need to build regional capacities²¹.

BUSToB was launched with three objectives²²:

1. Develop and pilot missing e-training materials on EQF levels 2 – 4²³ based on the future-ready qualification schemes developed in BUILD UP Skills Pillar II;
2. Develop short skill measurement tests to ensure workers have the right skills for the right task, to identify skills gaps and to supply relevant upskilling advice to craftsmen and construction workers;
3. Organise regional pilots trial and evaluate BUSNL training materials and regional capacity building.

The e-training modules aimed to provide workers with knowledge on new sustainable technologies. BUSToB foresaw the development of 76 modules divided into three categories:

- Basic skills level modules to provide basic knowledge of the consequences of the craftsman's own performance;
- Specialist skills level modules to provide specialist knowledge on one or more technologies;
- Planner & supervisor level modules to upskill planning engineers and construction supervisors²⁴.

Beyond these objectives, a series of targets were also defined as key success metrics as shown in Table 2:

Table 2: BUStoB success metrics

Monitored workers	≥ 3,000
Female participation	≥ 5%
Trained workers	≥ 3,000
Increase in RES-production	≥ 11 GWh/year
Increase investment in innovative sustainable energy	By EUR 42.8 million

Source: BUStoB Periodic Reporting for Period 1²⁵

2.

Achieved or expected results

DUBUS' main achievement was to modernise construction job profiles, dating from as far back as 2008 in some cases. These profiles are documents used to develop and structure the initial educational structure and offer. Modernising these documents was therefore a necessary step towards modernising the education offer, on both the initial and post-initial side²⁶.

DUBUS also developed a new qualification structure for post-initial training²⁷. This structure determines what the professions and sub-professions in the construction sector are. Done in collaboration with market players, the new profiles clarified market needs and the level of supply available. The new qualification structure made professional orientation easier. Furthermore, the new qualification structure allowed for the development of add-ons to complement the traditional course offer²⁸.

DUBUS also designed a monitoring and reporting system that was used to evaluate the evolution of BUSN@W. The system provided for regular assessment and reporting, frequently posting data and feedback on the programme website²⁹. It was however decided to exclude CO₂ figures from the reporting and monitoring system. According to the project secretary, it was simply not considered feasible at the time³⁰. Evolution of CO₂ emissions is the result of a variety of connected and intertwined elements, therefore, singling out the impact of a specific programme, especially of such a recent one, was impossible.

As DUBUS was mainly a preparatory step prior to the launch of BUSN@W, the real impacts and achievements of DUBUS cannot be judged separately, but should be assessed in the context of BUSN@W's achievements.

Table 3 presents the key results of BUS_N@W. Paradoxically, the programme trained significantly

less workers than it had planned, and yet it also managed to raise substantially more funds than initially targeted.

BUS_N@W managed to upskill 10,000 workers, compared to the minimum target of 50,000 set at the start of the initiative. That equates to a 20% success rate.

It is therefore unlikely that the programme will meet its final objective of 150,000-200,000 workers by 2020³¹.

The programme was, however, a success in raising additional funding. BUSNL was originally funded by the Intelligent Energy Europe programme³². BUSN@W subsequently ran a fund-raising campaign and managed to gather a total of EUR 40 million from different sources (mainly regional public institutions, the Dutch government and training institutions)³³. This important sum allowed the programme to become fully autonomous in the post-completion stage, turning a one-shot programme into a sustainable training programme³⁴.

Table 3: BUS_N@W results

Trained teachers	89
Trained workplace trainers	140
Trained HR-advisors	39
Trained Employees	10,000
Funding	EUR 40 million

Source: BUS_N@W Fact Sheet³⁵

This support demonstrates the importance of the BUSNL programme to its stakeholders as a whole, despite the low number of trained workers. It is also because BUSN@W achieved success in terms of its other objectives. Three different interdisciplinary training courses were developed for workplace coaches, builders and installers to encourage the integration of skills between installation and construction³⁶. BUSN@W developed the missing

qualifications programmes and updated the initial and post-initial training systems³⁷, as well as the new certification system and an advisor app to provide advice to workers on the types of trainings they need³⁸.

BUSN@W also trained a first batch of trainers. No quantitative objectives were provided before the programme however, in terms of the number of trainers to be trained, which therefore makes it difficult to assess how the results compared to the plan.

Nonetheless, the overall objective of upskilling 50,000 workers was not met. According to the project secretary, it was assumed by the people in charge of the programme that the main issue was the communication campaign’s incapacity at raising awareness and interest among blue collar workers³⁹.

The BUSNL communication campaign was designed to increase participation in BUSNL training activities. The campaign’s output included the publication of several articles, the release of an app to provide workers with an optimised and tailored training offer, and the organisation of two national conferences involving market players⁴⁰.

According to the project secretary, it was enough to reach out to officials and experts but not to increase workers’ participation. The project secretary believes that this is because workers have less time to invest in such activities⁴¹. Furthermore, workers had even less time to invest in training activities over the course of the programme, because the Dutch construction market was facing an important demand for new construction due to a shortage of labour⁴².

The follow-up BUSToB programme was designed to address the shortcomings of BUSN@W. BUSToB developed an app that went beyond providing an assessment of skills needs and training pathways. The training offer was digitised and provided on the app with short tests to evaluate a worker’s level of skills. The clustering of some topics and the possibility to cover new technologies that became mature over the course of the project led to the development of 74 modules⁴³.

Table 4: BUSToB results

Monitored workers	Not provided
Female participation	Not provided, but 42 female ambassadors were trained
Trained workers	550 trainers as ambassadors
Developed modules	74
Increase in RES-production and investment in innovative sustainable energy	Not provided

Source: BUSToB Final Report⁴⁴

The different modules were tested and assessed. The resulting training modules were considered of good quality and this is further demonstrated by the fact that three educational publishers used them to produce traditional training materials in paper format⁴⁵.

Furthermore, BUSToB also upgraded the advisor-app developed in BUSN@W to include short skill measurements tests⁴⁶. They were designed as self-assessment tests so that workers could identify their own skills gaps. As these tests are mainly additional features on the platform, they are an interesting addition but are not key content. Their importance has not been assessed in the final BUSToB report.

BUSToB conducted regional pilots to test and improve the e-modules. The pilots also helped building regional capacities by training more trainers.

The pilots provided the initiative with interesting feedback to further strengthen the e-modules. However, the pilots also showed that workers were not dedicating enough time to the e-modules. This proved the importance of also developing training in more classic formats⁴⁷.

This point is an important underachievement of the BUSToB programme. E-modules formed a central feature of the program to reach-out to blue-collars and the pilots demonstrated that this tool was simply not efficient in achieving this objective. No data about the number of workers that followed the e-modules training are provided. The BUS project’s initiative however describes them as disappointing⁴⁸.

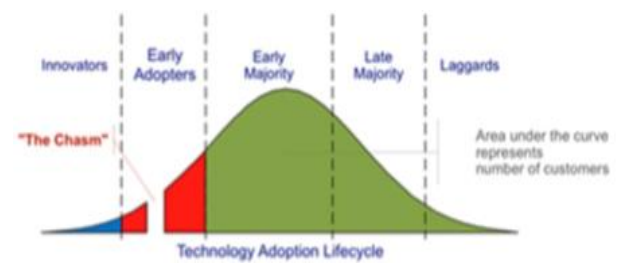
It can be questioned if BUSToB selected the most relevant tool to reach-out to blue collars using e-modules. A low-completion rate is indeed a common problem with e-modules, as illustrated with the example of MOOCs, which only displays a median completion rate of 12.6%⁴⁹. Furthermore, this underachievement raises some doubt about whether the original diagnostic leading to the launch of BUSToB was correct. It was originally assumed that time constraints were the most likely reason preventing workers from participating in the training. That belief actually drove the move to create e-modules, to provide workers with a more flexible training offer.

However, it has subsequently become clear that time constraints were not the main problem. According to the Energy Saving Non-Residential Building Programme Coordinator at the Netherlands Enterprise Agency (RVO), the real problem was the lack of market demand⁵⁰. Workers in construction are more likely to engage in training when they are motivated to do so by business incentives.

BUSToB succeeded in improving the learning infrastructure, but having failed to upskill the intended number of workers. The experience leads to the conclusion that while the training infrastructure is essential for an upskilling initiative, it is not sufficient without the support of market demand or incentives.

The BUSToB initiative draws similar conclusions in its final report⁵¹. It assesses the demand for new EE constructions and demonstrates that the Dutch market has only reached the early-adopter stage. Furthermore, the report demonstrates that the number of workers trained yearly is directly correlated to the market's maturity. In other words, the report illustrates the fact that, while the upgrading of the training infrastructures was necessary to upskill the workforce, this was not a sufficient step as the evolution of the market demand is a decisive element.

Figure 2: Technology adoption lifecycle



Source: Final BUSToB report⁵²

In conclusion, the BUSNL programme as a whole has successfully developed the training infrastructure that is needed to meet the future growth in demand for new EE construction. However, BUSNL fell significantly short of meeting its overall training delivery objectives. Although this represents a sizeable underachievement, it has revealed additional factors in play that are key to the roll out of EE skills training. The foundations and infrastructure for this type of training are now in place, and different complementary teaching materials and formats are available; however, demand for EE training is closely linked to market demand for EE installations. Construction companies and craftsmen are more likely to invest in training when there is a sufficient business incentive to justify the investment.

An additional positive result from the BUSNL initiative relates to its involvement in European exchanges activities throughout the entire BUSNL implementation period. To share the knowledge and best practices gained from the initiative, a series of conferences and meetings were organised during and after the initiative, allowing for cross-fertilisation and mutual inspiration. Additionally, the BUS consortium joined forces with IDES-EDU (a European training programme for architects and engineers) and contributed to the PROF/TRAC platform (a European open training and qualification platform on NZEB construction and innovation), in order to share their combined knowledge beyond national borders⁵³.

3.

Perspectives and lessons learned

Key lessons are described from the perspectives of five types of stakeholders:

1. **Implementation authorities:** educational institution, training institutions, ministries, etc.;
2. **Trade associations:** construction, architect, etc.;
3. **Construction industry players:** contractor, manufacturers;
4. **Two additional stakeholders will be considered from an external perspective as involving them more in future project is one of the key lessons learnt:** financial institutions and consumers.

From an **implementation perspective**, according to the BUSNL project secretary⁵⁴, the training institutions consider BUSNL to have been a success, because occupational profiles were successfully updated and the training infrastructure was set-up. Furthermore, public authorities have also seized the opportunity to make broader use of the programme. In the Netherlands, government programmes can often take the shape of a “Human Capital Agenda”. This is the tool that is used to implement the results from BUSNL in other human capital activities for cross-fertilisation purposes⁵⁵.

However, according to the Energy Saving Non-Residential Building Programme Coordinator at the RVO, the low number of upskilled workers remains an important limitation on the programme’s results⁵⁶. Although the training provided is of high quality, greater focus should have been given to stimulate demand for that training⁵⁷. One lesson learned therefore is that other complementary measures should be considered to help boost demand to enable BUSNL to reach its objectives. For example, the state could devise incentive measures to encourage companies and workers to invest time and resources in training⁵⁸.

Another barrier to workers engaging in new training is the lack of sense of emergency. Demand for classic sources of energy remains strong and the workforce is already ageing, meaning that they stick to old ways and do not see the need for new training⁵⁹.

Furthermore, the labour shortage means that the demand is still going to stay high, even for workers that do not upskill. Another lesson therefore could be to explore alternative solutions to solve the labour shortage and the lack of willingness of workers to engage in training. For example, the industrialisation of parts of the construction industry would allow for the standardisation of quality, would increase productivity and would also compensate for the labour shortage smaller workforce⁶⁰.

In the same order of ideas, the Energy Saving Non-Residential Building Programme Coordinator at the RVO argues that BUS did not sufficiently improve the initial training courses⁶¹. The Coordinator says that the training provided in high-schools, universities, etc., does not adequately enable workers to master new technologies and techniques. From this point of view, BUSNL expanded the initial training with add-ons and developed the post-initial training in a satisfying manner. However, the improvement of the overall teaching system to provide new workers with a sufficient level of operability in these new techniques is still necessary. From this perspective, a key lesson is the need to adopt a more encompassing approach considering the modernisation of the overall initial training system rather than developing add-ons.

From the **professional associations’** perspective, according to the policy advisor from the architect bureau of the Netherlands⁶², while the results of BUSNL can be seen as satisfying, they have highlighted the need to adopt a more encompassing approach to also include White Collar workers in future upskilling initiatives. This is especially true for engineers and architects who have a decisive impact

on a construction's EE potential: if the implemented design does not allow for energy efficiency, then the number of trained workers will not change the final results. EE targets will be reached not solely through the improvement of the Blue Collars workforce, but with a better integration of the entire construction chain and the upskilling of its different elements.

Based on the participation in the National Qualification Platform and position as intermediary between the different stakeholders, the BUSNL project coordinator assessed the **feedback from industry** as especially positive. At the policy-making level, private players were able to make their voices heard for new regulations and funding for additional upskilling activities. The project secretary⁶³ says that the Branch organisations also used the results to adapt their internal structure to the changing market and increase their ability to satisfy the future needs of their customers⁶⁴.

According to a business manager at the Urgenda Foundation, which is an organisation engaged in research on sustainability and innovation in construction, BUSNL produced mixed results.

Although BUSNL was a positive move in the right direction, it did not provide adequate training in insulation, mainly because there was a lack of cohesion between insulation and installation, which are closely interconnected tasks.

In addition, white collar workers also display a lack of education in energy efficiency when it comes to planning and advising, which is something unaddressed in the BUSNL initiative, as these are white collar activities⁶⁵.

Two additional types of stakeholders – **financial institutions** and **consumers** – are also relevant to the BUSNL initiative but were not really engaged in its implementation. The need to involve them in future BUSNL-related activities is another lesson learned.

According to the policy advisor of the architect bureau of the Netherlands⁶⁶, more engagement of the **financial institutions** will be decisive as these players have significant influence in the market and on demand. Not getting a loan for a construction project is, for example, a deal-breaker. There are also a lack of financial products tailored for EE construction on offer from financial institutions. More EE-related financial products are needed to help boost the demand. EE constructions also represent a higher cost initially but which are then

compensated with lower expenditures over the construction's lifetime. This however is not yet considered in existing financial products.

The sustainability advisor of the Nederlandse Vereniging van Banken further confirms the inability of previous legislative attempts to provide financial aid to support EE construction projects⁶⁷. For example, a past agreement for allowing higher loans for investments in EE projects did not work: rules for getting access to the fund were unclear and consumers were not necessarily aware of the product's existence. Additionally, local governments changed the rules for the provision of subsidies to EE projects, leading to important uncertainty. An existing green scheme providing tax cuts for EE construction projects (in all construction segments) exists, but it is only in the process of being assessed and it is therefore difficult to know if it managed to sufficiently improve access to finance for EE constructions.

However, according to both the Dutch Banking Association (Nederlandse Vereniging van Banken) and the Netherlands Enterprise agency, the problem also stems from insufficient demand. Although the careful monitoring of the finance programme is important, it leads to cumbersome, slow and difficult procedures. Other types of problems exist further impeding the growth of market demand, such as the lack of large-scale EE products, the fact that only some banks are allowed to provide the aforementioned tax cuts, and a significant lack of customer awareness. These are all factors that are limiting demand for current EE friendly financial products.

All of the interviewed stakeholders agreed and insisted that, in order to boost demand for EE constructions, and therefore the demand for trained workers, the consumer perspective has to be given more consideration.

Consumers are the key to boosting demand and providing them with information is a crucial step in making sure that they will ask for EE constructions. Informed customers tend to know what types of EE solutions are available and are therefore able to request specific EE products. Informed customers are also better placed to require and verify EE qualifications, thereby incentivising workers to upskill. Untrained customers on the other hand, are as much of an issue as an untrained workforce as they do not drive up demand for EE products. This is

why, according to the BUS initiative secretary, the possibility of exploiting the BUS results to raise customers' awareness is currently being explored.

4.

Conclusions and recommendations

The conclusions will depend on the perspective one decides to adopt to consider BUSNL's achievements. On the one hand, the programme's weakness was the still insufficient number of trained workers (10,000 out of the minimum target of 50,000) but, on the other hand, BUSNL is not the only BUS programme facing such a shortcoming⁶⁸. Furthermore, it could be argued that requiring the programme to provide both learning infrastructure and upskilling might be a mistake in the programme's conception. The BUSNL's central feature was to develop the training infrastructure and not to upskill the workforce.

However, the creation of a training infrastructure does not guarantee participation. For workers to engage in post-initial training and new workers to engage in the new initial training, incentives are necessary. Incentives to encourage workers to engage in post-initial training should focus on stimulating market demand. Incentives to encourage new workers to engage in initial training would be best focused on making the profession more attractive to young people. BUSNL had no control on any of these factors and cannot therefore be held responsible for the lack of trained workforce.

Despite the lack of a trained workforce, BUSNL can be credited with several important achievements. It successfully set-up the training infrastructure, reached financial autonomy through its fund-raising campaign, allowed for cross-fertilisation with other HR activities and shared its key learnings with other European partners and initiatives.

Based on the key lessons learned and the achieved results, four recommendations can be made about the overall programme:

- The entire construction supply chain should be included in upskilling activities, including white collar workers;
- The programme should be extended to involve two additional types of stakeholders: financial institutions and consumers. More EE friendly financial products are required to encourage and support EE projects. On the consumer side, the lack of awareness and education was raised by all interviewed stakeholders as being a decisive barrier to market uptake: undertaking a complementary programme to upskill the consumer side therefore appears to be a necessity;
- The reasons that led to the disappointing number of trained workers highlights the importance of connecting training infrastructure initiatives with their national ecosystems. Demand drives supply by creating business incentives to encourage employees and employers to engage in training. Without sufficient demand, there is limited incentive to upskill. Training the workforce is an indispensable element to boost demand, but the government can also use other elements. As suggested by the Energy Saving Non-Residential Building Programme Coordinator at the Netherlands Enterprise Agency (RVO), providing incentives and creating legal requirements such as the obligation for companies to invest 1% of their profits in upskilling could be interesting leads to explore. However, legislation, requirements and incentives for EE construction would need to be related to long-term objectives. These types of measures would provide the legal certainty that is needed to stimulate demand and long-term EE investments;
- The lack of young workers engaging in a construction career is a problem for the overall construction industry but also for the specific EE programme: in order to upskill a workforce, there needs to be a workforce to train in the first place. Industrialisation of the construction industry is a partial solution that is already being explored by industry players, but it could also be

combined with marketing campaigns to encourage youngsters to work in construction. There are also two further recommendations that are specific to BUSN@W and BUSToB:

- BUSN@W successfully created add-ons and updated the post-initial training system. However, a more encompassing approach should be adopted by future initiatives. Updating the overall cursus of the initial training would add value to the entire training system and the construction market;
- The addition of e-modules is a nice addition to the results achieved over the course of the overall BUSNL programme. It however appears clear from the completion of BUSToB that this is not the ideal tool to reach-out to blue collar workers. It is therefore recommended for new programmes to consider e-learning as a nice-to-have feature rather than an objective.

Overall, BUSNL is rated as a '4 star' 'good practice' measure, using a scale of 1 (low) to 5 (high). This scoring is based on a number of reasons. On the one hand, the programme has successfully developed the training infrastructure. The initiative successfully addressed the training gaps. The programme also overachieved in some regards, for example raising EUR 40 million in additional funding, instead of the originally planned EUR 10 million. The creation of the training app and the launch of the follow-up programme is evidence of the programme's ability to acknowledge issues and find creative solutions to tackle them. On the other

hand, however, BUSNL did not reach the target of 50,000-70,000 workers set at the beginning of the programme. Although this represents a significant underachievement, low market demand was an issue, outside of the control of the programme. Nevertheless, it proved to have a big impact on participation numbers.

The programme also receives a 4-star ranking in transferability. The programme's transferability is greatly facilitated by its clearly defined structure, starting with a market and needs assessment, through to solution roadmapping, training and qualification infrastructure development, implementation and evaluation.

The programme did not receive the maximum score in transferability because the BUSToB component is more difficult to replicate. BUSToB was an initiative launched to tackle specific issues identified over the course of the two previous programmes. It was therefore an addition rather than an extension to the initial BUSNL programme.

An additional comment on transferability is also made by a policy advisor at the Architect Bureau of the Netherlands. Programme replication in other countries can be a difficult balancing act as constructions are not mere technical accomplishments but also the reflection of a particular culture⁶⁹. Standardisation is indispensable, but forgetting the need to adapt to local cultures and tastes could incur resistance from the demand side and, eventually, potential failure.

Endnotes

- 1 Build Up Skills Netherlands (BUSNL):
<http://www.buildup.eu/en/skills/bus-projects/NL>
<https://buildupskills.otib.nl/buildupskillsnl/>
- 2 The "Lente Akkoord" (Spring Agreement) is an agreement concluded between the four main trade associations active in the Dutch construction market and the Dutch government. Namely the signatories are: Aedes, Bouwend Nederland, NEPROM, NVB and the Minister of the Interior and Kingdom Relations. The agreement led to the creation of a platform in 2015 with the objective of fostering energy transition of Dutch the construction market:
<https://www.lente-akkoord.nl/>
- 3 "Meer met minder" (more with less) is the national energy saving approach for existing homes and other buildings. It is a joint initiative of the government, housing corporations, construction, installation and energy companies. The aim of the approach is to make existing homes and buildings on average 20 to 30% more energy-efficient."
<http://www.energieminder.nl/energieminder/meer-met-minder/>
- 4 Build Up Skills Netherlands (BUSNL):
<http://www.buildup.eu/en/skills/bus-projects/NL>
<https://buildupskills.otib.nl/buildupskillsnl/>
- 5 Final report of the BUS_N@W project:
https://buildupskills.otib.nl/Upload/BUS-NL_Report%20BUS_N@W_EN.pdf
- 6 Initiative website, loc cit.
- 7 Final report of the BUS_N@W project, loc cit.
- 8 Interview with Jan Cromwijk, project secretary of the BUS initiative.
- 9 Build Up, loc cit.
- 10 Initiative website, loc cit.
- 11 BUSNL, Status-quo analysis, August 2012:
http://www.buildup.eu/sites/default/files/bus_projects/build_up_skills_netherlands_status_quo_final.pdf
- 12 BUP, National Roadmap & Results of WP3, May 2013:
<https://buildupskills.otib.nl/Upload/BUSNL-Roadmap-FinalReport%20with%20Annexes.pdf>
- 13 BUSNL, National Roadmap, 2013:
http://www.buildup.eu/sites/default/files/bus_projects/busnl-roadmap-finalreport_with_annexes.pdf
- 14 National Roadmap & Results of WP3, loc cit.
- 15 European Commission, Final Report on the Assessment of the BUILD UP Skills Pillar II, loc cit.
- 16 Final report of the BUS_N@W project:
https://buildupskills.otib.nl/Upload/BUS-NL_Report%20BUS_N@W_EN.pdf
- 17 European Commission, Final Report on the Assessment of the BUILD UP Skills Pillar II, loc cit.
- 18 BUP, National Roadmap & Results of WP3, loc cit.
- 19 Ibidem.
- 20 BUStoB general information leaflet, 2016:
http://www.buildup.eu/sites/default/files/link-files/bustobgeneral_information17.pdf
- 21 Interview with Jan Cromwijk, project secretary of the BUS initiative.
- 22 BUStoB general information leaflet, loc cit.
- 23 EFQ 2 and 3 refer to the European Qualification Framework level 2 ("Basic factual knowledge of a field of work or study") and 3 ("Knowledge of facts, principles, processes and general concepts, in a field of work or study"). Descriptors defining levels on the European Qualification Framework (EFQ):
<https://ec.europa.eu/ploteus/en/content/descriptors-page>
- 24 BUStoB Final report:
<https://buildupskills.otib.nl/Upload/649737%20-%20BUStoB%20D1.3%20Final%20result-oriented%20report%20EN.pdf>
- 25 CORDIS:
https://cordis.europa.eu/result/rcn/200951_en.html
- 26 BUP, National Roadmap & Results of WP3, loc cit.
- 27 Final report of the BUS_N@W project, loc cit.
- 28 Ibidem.
- 29 Initiative website, loc cit.
- 30 Interview with Jan Cromwijk, loc cit.
- 31 BuildUpSkills, Statu-quo analysis, loc cit.
- 32 Initiative website, loc cit.
- 33 Final report of the BUS_N@W project, loc cit.
- 34 Ibidem.
- 35 Policy Fact Sheets, BUSNL:
<https://ec.europa.eu/energy/intelligent/projects/en/projects/build-skills-nw>
- 36 Final report of the BUS_N@W project, loc cit.
- 37 Ibidem.
- 38 Ibidem.
- 39 Interview with Jan Cromwijk, loc cit.

- 40 Final report of the BUS_N@W project, loc cit.
- 41 Interview with Jan Cromwijk, loc cit.
- 42 Interview with Scharon van Ende, sustainability advisor of the Nederlandse Vereniging van Banken
- 43 BUSToB Final report:
<https://buildupskills.otib.nl/Upload/649737%20-%20BUSToB%20D1.3%20Final%20result-oriented%20report%20EN.pdf>
- 44 Ibidem.
- 45 Ibidem.
- 46 Ibidem.
- 47 Ibidem.
- 48 Interview with Jan Cromwijk, loc cit.
- 49 Massive open online course (MOOC) completion rates revisited: assessment, length and attrition:
<https://files.eric.ed.gov/fulltext/EJ1067937.pdf>
- 50 Interview with Selina Roskam from the Netherlands Enterprise Agency (RVO).
- 51 BUSToB Final report:
<https://buildupskills.otib.nl/Upload/649737%20-%20BUSToB%20D1.3%20Final%20result-oriented%20report%20EN.pdf>
- 52 BUSToB Final report:
<https://buildupskills.otib.nl/Upload/649737%20-%20BUSToB%20D1.3%20Final%20result-oriented%20report%20EN.pdf>
- 53 Final report of the BUS_N@W project, loc cit.
- 54 Interview with Jan Cromwijk, loc cit.
- 55 Ibidem.
- 56 Interview with Selina Roskam from the Netherlands Enterprise Agency (RVO).
- 57 Ibidem.
- 58 Ibidem.
- 59 Ibidem.
- 60 Interview with Jan Cromwijk, loc cit.
- 61 Interview with Selina Roskam, loc cit.
- 62 Interview with Jan Cromwijk, loc cit and interview with Jasper Kraaijeveld, policy advisor market & entrepreneurship of the Dutch architect trade association.
- 63 Interview with Jan Cromwijk, loc cit.
- 64 Ibidem.
- 65 Gijs van Wijk, business manager of the foundation Urgenda/ operating company ThuisBaas.
- 66 Interview with Jasper Kraaijeveld, loc cit.
- 67 Interview with Scharon van Ende, sustainability advisor of the Nederlandse Vereniging van Banken.
- 68 See for example the results of the CROSKILLS initiative: CROSKILLS:
<http://www.croskills.hr/>
- 69 Interview with Jan Cromwijk, loc cit.