KOSOVO WOOD BIOMASS ASSESSMENT
OPPORTUNITIES AND CHALLENGES

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1. Executive summary

This report covers the status, opportunities and challenges of the value chains for biomass wood pellets and for pellet stoves/boilers. The two value chains are closely linked, as the pellets represent the main energy resource used in the boilers.

Both value chains are enjoying steady and accelerating growth, creating real business opportunities for Kosovo based pellet producers and stove manufacturers. The total market size for pellets is difficult to determine as a result of undeclared imports and local production, but the rough estimate of total sales on the Kosovo market was estimated at 24,000 to 29,000 tons in 2014. The market leader is Gorenje that sells pellets imported from Serbia that are certified with the ENplus standard. Until now, no Kosovo pellet producer is ENPlus certified which negatively affects product performance.

In reviewing the characteristics and performance of the two value chains, including inputs, production, outputs, distribution and consumption, through interviews with relevant actors, visits to production units in the field and desk research, a set of clear opportunities were identified, as well as bottlenecks that need to be overcome in order for the individual company and/or value chain to improve performance. In order to strengthen company performance and create higher product value for the consumers, there is an urgent need among the large majority of pellet producers in Kosovo to improve productivity, implement international standards and coordinate logistics. The value chain as a whole is heavily dependent on wood materials from local forests, which is rapidly becoming a scarce resource due to high demand and illegal logging. On the opportunity side, there exist a strong and rapidly growing demand for pellets, as a cost-effective alternative to other sources of energy.

The pellet boiler/stove value chain is also enjoying high and growing demand for their products. This value chain involves fewer and larger actors. The manufacturers are more mature as companies, technically more sophisticated, including implementation of international standards, than the pellet value chain and have a clear export-orientation. In the pellet stove/boiler manufacturer value chain the opportunities outweigh the bottlenecks. The companies have the willingness to expand production and see export as the key method of achieving that goal.

This report presents a detailed action plan, with six stand-alone interventions aiming to overcome the identified bottlenecks and seizing existing opportunities, and as a result boosting the performance of the two value chains. In the pellet production value chain the interventions focus on concrete ways to optimize production, introduce quality management systems and implement international quality standards, as well as to improve the dialogue and cooperation among the pellet producers. For the pellet stove/boiler manufacturers, the core focus of the interventions should be on international market expansion. To accommodate a pending increase in exports, the interventions will also include continuous production optimization and implementation of specific international standards.
In addressing the value chain specific constraints and effectively seizing market opportunities, both value chains are certain to experience phenomenal growth in the next 5-10 years. In turn, those Kosovo producers that adhere to international standards and offer the greatest value-for-money to the customers will grow dramatically, creating a large number of new jobs.
2. Introduction

Biomass (wood) pellet production and consumption is a relatively new phenomenon in Kosovo. Only five years ago, few people knew what pellets were, or as Fatmir Kadriu, the owner/general manager of Gorenje, the largest importer of pellets into Kosovo, explained, "the first time I saw a pellet at the Berlin fair, I thought it was animal fodder". Since then, the pellet value chain has experienced extraordinary growth in import, sales and production. Also, the value chain for the manufacturing of pellet stoves and boilers has expanded dramatically in recent years. All indicators point to further rapid growth in both value chains in the short- and medium-term.

Tahir Ahmeti of the Forest Agency, with 30 years of experience in forest management, put the finger on the core issue affecting the quickly evolving pellet value chain, highlighting that “the biggest challenge for the sector is lack of knowledge.” Again, the pellet is a relatively new product on the Kosovo market. Consumers are not fully aware of the financial, energy efficiency and environmental benefits of pellet burning. Pellet producers lack knowledge about the benefits of optimizing production and management, as well as implementing international quality standards. Furthermore, achieving higher levels of production optimization is necessary to products of higher quality in line with international standards, and in larger volumes that the local market is increasingly requiring.

Among the pellet stoves and boilers manufacturers in Kosovo, the situation is somewhat different. In general, their business practices are more evolved. The three largest manufacturers of pellet boilers, Enrad, Metali and Ylliterm, are all expanding outputs in response to the growing demand for pellets. Enrad launched its range of boilers in 2014, a portion of which are for export markets. In 2015, the company launched its initial range of pellet stoves for home use, mainly targeting the domestic market. Enrad is expecting steady growth in this product segment as well. Furthermore, the three value chain leaders are looking abroad for further market expansion. With well-equipped production units, a commitment to international standards and the possibility to work more than one shift per day, all three possess great potential for international growth. “All we need is the chance to show what we can do”, was Kushtrim Hoxha’s, owner of Metali, request to potential International buyers.

This report is organized in the following way. The first two chapters describe in detail the pellet value chain and pellet stove and boiler value chain respectively, with focus on inputs, production, outputs, distribution and consumption. A series of opportunities and challenges affecting the development and growth of the two value chains are identified and discussed. Chapter 4 addresses the external environment influencing the value chains. This includes an analysis of policy, legal and regulatory frameworks, which directly affect the operation of the value chain, such as the issuing of concessions for cleaning of state forests by the Forest Agency. This chapter also addresses the access to finance issue. The report’s main findings as well as the key constraints and opportunities of the two value chains are highlighted in Chapter 5.

Chapter 6 presents a proposed action plan, with the aim of guiding and structuring the EMPOWER project’s future support to the pellet and pellet stove/boiler value chains. In essence, the action plan presents options and ideas on how to reduce the identified bottlenecks and constraints in the value chains, and how to maximize the identified opportunities. The ultimate aim is to boost local production and sales of pellets and pellet stove/boilers, in an environmentally sustainable way, leading to a decrease in imports, increase of exports and job creation within the two value chains.
3. The Value Chains

- 3.1 Pellets and Briquettes Value Chain

The value chain for pellets/briquettes:

1.1 3.1.1 Inputs (Supply of raw materials)

All wood materials used in the production of pellets and briquettes originate in the forests. The sawdust and cutter savings, two of the core ingredients in pellets, are bi-products from the wood-processing industries, including furniture manufacturers. In Kosovo, the availability of domestic sawdust is consequently linked to the production capacity of the domestic wood-processing sector. As more pellet producers enter the market, the demand for sawdust will increase, and assuming that the output of the wood-processing industries is constant, the price for sawdust will increase. Stakeholders in the sector confirmed that the price for domestically produced sawdust has been increasing in 2015. With the expected rapid growth of the pellet market in Kosovo, pellet producers will increasingly need to look for alternative sources of sawdust, mainly in the region (Bosnia, Serbia and Montenegro).
The other main materials for pellet and briquette production are unmerchantable wood. This refers to the wood materials collected during the thinning and cleaning of forests, such as whole trees, branches, and stumps. These wood materials are cut into wood chips, which in turn are dried and mixed with the sawdust in the pellet production process (see 3.1.2 on production below). The higher the moisture of the raw wood, the more energy required to dry it. Drying takes place either by storing the wood outside (natural drying) and/or as an integral part of the pellet production process (artificial drying through ovens). Both drying methods involve costs, which must be included in the production cost and price calculation of the final product.

A third source of raw materials for the pellet and briquette production includes fast growing trees and other plants. This source is not yet utilized in Kosovo, but one pellet producer (Thes-ari) confirmed that they are in the process of testing the use of the stem from wheat, sunflower, and corn plants, based on a technology from Switzerland. Sawdust will remain the core component of the pellet (approximately 70%), while the other 30% will consist of straw. The company estimates the first test production to take place in the summer of 2015.

Forest situation in Kosovo

Forests cover 44.7% (481,000 ha) of Kosovo’s territory. 295,200 ha are public lands, which are managed by the Ministry of Agriculture, Forestry and Rural Development (MAFRD). Approximately 181,000 ha are privately owned forests.

MAFRD estimates the total volume of Kosovo’s forest is about 45 million m³. The forest volume grows by about 1.5 million m³ annually. In order to be environmentally sustainable the annual harvest should not exceed 1.3 million m³. Current harvest levels are estimated to over 2 million m³, approximately 720,000 m³ over the recommended annual levels.

The excessive harvesting is mainly a result of illegal and irregular logging, driven on by the significant demand for wood by households. The economic losses to the formal economy, caused by illegal logging, is estimated to €16.7-19.5 million annually.

Draft Law of Forests, Article 58 Forest biomass and wood for energy

1. For production of renewable energy, forest biomass and the following wood mass may be used:
   1.1 Thinner wood above 10 cm for coniferous and above 7 cm for broadleaves from forest thinnings;
   1.2 Low quality or damaged wood from sanitary and restoration cuttings, as well as from conversions of degraded forests;
   1.3 Wood from forest cultures and plantations established for production of biomass.

International Standardization Organization (ISO) on Forest Management

ISO is currently developing a Forest Management Standard (ISO 19228). The aim of this new standard is to “balance the need for traceability with the requirement that all companies...must be able to guarantee that the wood forest products they place on the market origin from sustainable source.”

The new ISO standard will “enable producers to manage their traceability systems in an efficient and transparent way and provide consumers with reliable and trustworthy information on the environmental and social integrity of wood products.”
Among the households in Kosovo surveyed by the ENRA researchers, 88% use wood fuels for heating. As few as 5% of Kosovo households use electricity, while another 7% use coal, oil or gas. In urban areas 78% still use wood for heating, while in rural areas the number is 95%.

As a result of the growing demand for wood fuels, which significantly exceeds supply, it is estimated that Kosovo’s forests will be totally depleted in less than 50 years. To meet its energy needs, Kosovo will increasingly become an importer of timber, fuel wood and timber byproducts.

To remedy this urgent and environmentally unsustainable situation within the forest sector in Kosovo, the introduction of international good practices in documenting wood resource traceability, including the introduction of international standards (see textbox on ISO 19228 above), represent practical and viable steps in the right direction.

3.1.1 Bottleneck 1: Shortage of raw material supply in Kosovo

The excessive over-harvesting of Kosovo wood resources will force local producers of pellets to identify new raw material suppliers abroad, in order to secure raw material supply in the medium-term. Importing raw materials will increase the cost of production, as higher transportation costs and other import related costs must be added to the current costs of production.

Alternatively, the producers will be incentivized to engage in product development, mixing wood materials (sawdust, wood chips) with straw from agricultural production (maize, sunflower, wheat, etc.) decreasing the demand for wood materials.

1.2 3.1.2 Production

According to their own estimates the production capacities of the Kosovo pellet producers range between 50 and 2.700 tons per year (2014 data). In total, the annual domestic production volume is estimated to 15.000 to 20.000 tonnes. Most of the producers work only one shift during 3-6 months per year, or even on an ad hoc basis. In comparison, the regional market leader, Biostar factory in Serbia, is a €7 million investment with a production process that is fully automatic, runs 24/7, all year around.

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1 "Kosovo’s Forestry Sector Overview – Prioritizing sustainable development“, Velimir Radicevic, Alicia English, Michael Waschak and Jim Myers, Centre for Energy and Natural Resources, AUK, 2015
To a large extent the pellet production process is rudimentary including elements of initial cutting, drying and filling wood materials, before pressing, fine cutting and packaging. The domestic production units (machinery, equipment, premises) vary greatly in sophistication. Independent of the organic content of the raw materials the final quality of the pellet is highly dependent on the sophistication of the production process.

The large majority of pellet producers in Kosovo appear to have limited industrial knowledge, skills and practical production experience, which are reflected in a general lack of production optimization. Simply put, the equipment does not appear to generate optimal outputs, as a result of inefficient use of labor time, materials, technology, people, etc.

At the moment, none of the interviewed pellet producers are implementing any kind of written quality management standard, let alone ISO 9000, as a means of structuring the production process leading to improvements in productivity, effectiveness and efficiency.

**3.1.2.1 Bottleneck 2: Low levels of productivity**

The low levels of productivity among domestic pellet producers are not only linked to the technical capacities of the machinery. Lack of production management skills and experience is a contributing factor. Production management’s key role is the unending and evolving optimization of all available resources whilst meeting the rising aspirations of the market in terms of quality, delivery, service and cost. Companies must perpetually improve to survive and thrive on an open and competitive market. A number of Kosovo pellet producers are clearly struggling at the moment to make the most of their resources, while others could further increase outputs and quality through basic project management interventions.

Few of the companies have engaged professional production engineering companies or experts to advise on the optimal setting up on the production line and establishing the appropriate production management system. Thes-ari and Dragai Group being the notable exceptions.

**1.3 3.1.3 Outputs (pellets/briquettes)**

Among the interviewed pellet producers in Kosovo, nobody could show third party evidence of the content, composition and qualities of the pellet. No systematic laboratory testing was or is taking place. The quality of the product is a subjective matter, leaving the final consumer in the dark.

As a consequence of the lack of systematic testing of the pellet product, no Kosovo producer can guarantee that their pellets do not include other materials than wood biomass, such as sand (to
add weight), plastics, or other non-wood materials, which would decrease the energy output of the pellet but more importantly could be directly harmful to the end users (consumers) of the pellets.

As a logic conclusion, no Kosovo pellet producer is today adhering to or implementing the international standards for biomass pellets, the ENplus standard (EN 14961-1 and 2).

By applying these standards, the pellet producer can offer the consumer a product of consistent and predictable quality, and where the raw material source is traceable. This means the specific wood material must be declared, and that the pellet is free of non-wanted materials, such as plastics, metal, stone, sand, etc. All in all, the international standards reflect a higher degree of consumer protection.

The fact that Gorenje is selling its pellets at a higher price than domestically produced pellets and still remains the market leader, indicates that consumers in Kosovo are becoming increasingly aware of the importance and benefits of international quality standards. Consumers are willing to pay the ‘higher’ price per ton, knowing they are getting ‘more value for money’.

For consumers, the ENplus standard means higher product quality, which in turn means more energy per euro spent. If this was not the growing perception among Kosovo consumers, it is difficult to explain Gorenje’s strong market position, and its expectation that the pellet market in Kosovo will grow significant in the near future.

**ENplus standard**

The ENplus certification system has been in force since 2010 and it aims to secure the supply of quality wood pellets for heating and Combined Heat and Power (CHP) up to 1 MW output power in residential and commercial/public buildings. The ENplus certification system ensures that the quality of the wood pellets is well documented and consistent. ([www.enplus-pellets.eu](http://www.enplus-pellets.eu))

<table>
<thead>
<tr>
<th>ENplus-A1</th>
<th>ENplus-A2</th>
<th>EN-B</th>
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</thead>
<tbody>
<tr>
<td>1.1.3 Stem wood</td>
<td>1.1.1 Whole trees without roots</td>
<td>1.1 Forest, plantation and other virgin wood</td>
</tr>
<tr>
<td>1.2.1 Chemically untreated residues from the wood processing industry</td>
<td>1.1.3 Stem wood</td>
<td>1.2 Chemically untreated by-products and residues from the wood processing industry</td>
</tr>
<tr>
<td></td>
<td>1.1.4 Logging residues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.1.6 Bark</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.2.1 Chemically untreated by-products and residues from the wood processing industry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.3.1 Chemically untreated used wood</td>
<td></td>
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</tbody>
</table>

To ensure the constant supply of high quality wood pellets from the producers of wood pellets, the entire process of production, logistics and delivery are monitored and controlled. Based on the specifications of the European standard EN 14961 (see text box for further details) three wood pellet qualities have been defined - ENplus-A1 and ENplus-A2, as well as the class EN-B.
The standard sets the requirements for technical facilities, operational procedures and documentation. This makes the operation processes transparent, and facilitates for rapid tracking and solving of problems. The ENplus specifications are based on ISO 9001 and EN 15234-2 (Solid biofuels, Fuel quality assurance, Wood pellets for non-industrial use).

The core elements of the ENplus certification process include the definition of quality classes and specification of pellet properties, requirements for wood pellet production and quality assurance, specifications for the in-house quality management (equipment and processes, employee qualifications, documentation duties, internal quality control, etc.), inspection and confirmation of the conformance of the wood pellets, pellet production and logistics system, and the execution of certification and external control, licensing and revoking, handling of complaints.

For the end customer, the ENPlus standard offers a guarantee of product quality and consistency in performance.

3.1.3.1 Bottleneck 3: Locally produced pellets do not adhere to international quality standards

The content and quality of the domestically produced pellets cannot be confirmed against accepted international standards. At this point only Thes-ari declared that they are working to introduce and implement both ISO, as a guarantee of a suitable quality management system being in place, and the EN Plus standard for the pellets to be produced by the new production line.

There is a need for initial testing of pellets in line with EN standard 14961 properties. Based on the test results a gap analysis could be completed, identifying areas within the production process where practical interventions are necessary in order for real improvements in the quality and consistency of the pellets are achieved.

However, the ENPlus standards will place significant requirements on company management and production units of pellets (machinery, technologies) in Kosovo. The risk is high that some local producers will not be capable of achieving the international standards.

1.4  3.1.4 Distribution

Most commonly, the local pellet producers sell their production directly to the end customers (private residence and public institutions). Orders are placed mainly ad hoc and over the telephone directly to the owner of the pellet production. Few customers appear to order pellets in advance, and even fewer customers pay and have the pellets delivered early, taking advantage of the significantly lower off-season price, and storing larger quantities of pellets at home.
The pellet producers have their own delivery service delivering the pellets by truck directly to the end customers all over Kosovo. To what extent the trucks are always full when completing the deliveries remains unclear, and leaves space for discussions among pellet producers active in the same geographical region to combine the delivery service, as a means of saving financial resources.

Another option to reduce transportation costs would be for the pellet producers to manage a Common Storage Facility in Pristina, representing the core market for pellets in Kosovo and with good road links to other main towns in the country. From the central storage, individual deliveries would be made to end customers more cost-effectively.

### 3.1.4.1 Bottleneck 4: Delivery systems and transportation costs

The fact that all local producers handle their own transportation, no matter the volume of pellets, does not appear very efficient and cost-effective. The exact amount of money that could be saved through a more collective approach to delivery and storage of pellets centrally would require further investigation, and would require the pro-active collaboration among the pellet producers themselves.

### 1.5 3.1.5 Consumption

The demand for pellets on the Kosovo market is strong and growing rapidly. All interviewed stakeholders in the pellet value chain confirmed that both the public sector (schools and other public buildings) and private consumers are increasingly turning to pellets as an alternative source of energy.

It is also expected that the demand for pellets will continue to grow very rapidly, driven by a number of socio-economic factors, such as improvements in living standards and the increasing costs of electricity.

A very large majority of the population in Kosovo is still using wood as the primary source of energy for heating, cooking and even boiling water. However, wood burning is a time-consuming activity, involving ongoing and labor-intensive cutting, drying, storing and burning. As family income and living standards increase, pellets, as a cleaner and more efficient source of energy than wood, become a viable alternative. Moreover, pellets are cheaper than oil, gas and electricity.

<table>
<thead>
<tr>
<th>Comparing wood to electricity</th>
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<tbody>
<tr>
<td>1.08 m³ of fuel wood is approximately equal to 0.0014 kWh per month of electricity. The market price of fuel wood is between €30 and €46 per m³. The market price for wood fuels multiplied with the conversion rate equals a wood equivalent price of €0.041 to €0.068 per kWh. When compared to electricity tariffs for the winter months in lower block tariffs, consumption of wood is more expensive than electricity at market prices above €39.5 per m³. (AUK research, 2015)</td>
</tr>
</tbody>
</table>

± The cost calculation in the textbox, comparison between pellets and diesel refers to the off-season (April) selling price of Gorenje of €170 per ton. During the high season (October/November) the selling price is €230, which would produce a final cost of €0.46, still significantly lower than diesel.
In 2014, the official import of pellets was 6,500 tons, according to Kosovo Customs. Of these 6,500 tons, Gorenje alone imported 5,500 tons. However, actors in the pellet value chain estimate that the unofficial import of pellets records minimum 3,500 tons. Unofficial imports refer to pellets imported into Kosovo most often under false declaration.

Estimating total sales of pellets on the Kosovo market is equally problematic. It is estimated, again by market actors, that the total sales of pellets in 2014 stood at 24,000 to 29,000 tons. This includes Gorenje’s documented import of 5,500 tons, unofficial imports of 3,500 tons, declared domestic production of approximately 10,000 tons and undeclared local production, estimated at between 5,000 and 10,000 tons.

Again, the exact volume of pellets sold on the Kosovo market cannot be confirmed by official sales records or other public documentation.

The sales record and future production projections of company Thes-ari also indicate a rapid growth in the pellet market in Kosovo (in tons):  

<table>
<thead>
<tr>
<th>Year</th>
<th>Pellets</th>
<th>Briquettes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>3,200</td>
<td>700</td>
</tr>
<tr>
<td>2015</td>
<td>5,000</td>
<td>1,000</td>
</tr>
<tr>
<td>2016</td>
<td>7,000</td>
<td>1,000</td>
</tr>
</tbody>
</table>

These figures are calculated on the production process working on one shift only. If running on three shifts the estimated production volume of Thes-ari alone will be over 20,000 tonnes!

### 3.1.5.1 Opportunity 1: Rapidly growing demand for wood pellets

For those companies that can produce pellets in accordance with international standards the future looks very bright. The demand for pellets is growing fast in Kosovo and all indicators tell the story of continuous growth in demand from both residential clients and public institutions.

However, as the customers become more aware of the importance of pellet quality and consistency, in generating the most heat for the money, individual company sales growth will be linked to improvements in quality and production capacities.

3 While production can be expanded from 1 to 3 shifts, the owner of Thes-ari questioned the availability of sawdust in Kosovo to secure this increase in production. The company is now investing in silos, filters and separators among long-term wood-processing companies, the suppliers of saw dust, in Kosovo and soon in Montenegro.
3.2 Pellet stoves and boilers Value Chain

3.2.1 Inputs (Supply of materials)

The three main inputs to the manufacturing of pellet stoves and boilers are steel, electronics (including electronic burners) and labor. The steel materials are mainly imported from steel mills in the region, more specifically from Macedonia, Serbia, Hungary, Bulgaria and Slovenia. The electronics are almost entirely imported from suppliers in Italy.

The manufacturing of pellet stoves and boilers are relatively labor-intensive productions, where the welding is done both automatic and by hand.

3.2.2 Production

The seven identified pellet stove and boiler manufacturers in Kosovo declared a total production volume of 2,000 stoves and boilers in 2014. Among the seven manufacturers, three of them (Enrad, Metali and Ylliterm) produced 1,800 stoves and boilers. Factory visits were conducted to these three obvious market leaders.

All three companies are managed by individuals passionately committed to their metal-processing business, which is clearly reflected in a drive for customer satisfaction and growth, making full use of available resources, including a well-trained workforce and maintained industrial park.

Although the industrial skills and experience may vary between the three pellet stove/boiler manufacturers, their production lines (equipment, machinery, organization) are extensive and generally well equipped, creating much room for increase in production output.

Currently, Enrad is employing 160 workers, while the staff of Metali and Ylliterm stands at about 50 respectively. Mainly as a result of the growth in the pellet stove market in Kosovo and export opportunities, all three companies expect to their workforce to grow in the coming years, with the creation of an approximately 50 new jobs. Enrad is already cooperating with the project...
(EMPOWER) on an internship scheme, which will build production skills in 10-15 students on a yearly basis. Enrad estimates to employ approximately 120 new staff during the next 3 years.

However, manufacturing is a fiercely competitive business, with very small profit margins and high risks. To remain competitive on the domestic market, and more importantly on a larger regional and EU market, the pellet stove/boiler manufacturers must continuously strive to improve their competitive advantages, reduce costs, improve product design and quality, etc. As with the pellet producers, although to a lesser extent based on their industrial qualifications, the pellet stove/boiler manufacturers and their production management teams in particular would benefit from a capacity building process with focus on production optimization in metal processing.

In order to continuously raise productivity of the individual manufacturing unit, the usage of the machinery and equipment must be optimal, guided by a well-tuned production management system, which in turn is integrated into a human resource management system. The importance of professional cost-calculation cannot be overestimated, especially for the manufacturing industries.

### 3.2.2.1 Opportunity 1: Output growth through production optimization

Manufacturing is striving for continuous improvements of practices. Production managers must be open for change in order to allow for innovation to take place. From a business point of view, there is a need for the owners of the pellet stove/boiler manufacturers to continuously strengthen the technical and managerial capacities of their respective production managers and key production staff on an on-going basis. This is particularly relevant as the companies experience growth and the need to employ and train more staff.

All three interviewed companies have the technical capacity to expand production, for example, by making better use of available resources (labor, time, materials, etc.) and by moving from
one to two shifts. However, a growth in outputs and workforce will require more effective management skills and organization of production.

1.8 3.2.3 Outputs (stoves/boilers)

Pellet stoves and boilers are produced in Kosovo in a variety of sizes and output capacities (20 to 1000 kW).

The smaller stoves with an output of 20-110 kW are used for heating residential living spaces, such as the family living room. Enrad is the only producer of pellet stoves in Kosovo. In fact, this new line of stoves was developed very recently, and being introduced on the Kosovo market in 2015. Enrad expect to sell approximately 500 of these interior stoves in the first year alone, while its annual capacity is now set at 2000.

All three of the market leaders (Enrad, Metali and Ylliterm) manufacture and sell central heating boilers. These boilers are usually placed in the basement or garage of a residential premises or public building. The power output of the central heating boilers is between 20 and 500 kW.

Metali and Ylliterm also manufacturers large industrial boilers for sue in larger premises such as schools, factories, etc. The power output of the industrial boilers can reach as a high as 1000 kW. A large number of these boilers are exported, mainly to the EU market with Germany as the largest individual national market.

International Standards

In order to be sold and used on the EU market a pellet stove and boiler must adhere to international quality standards, such as EN 13229 and EN 13240.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
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<tbody>
<tr>
<td>EN 13229</td>
<td>This standard refers to hand fed solid fuel fired inset appliances (boilers), such as pellets and briquettes. The standard &quot;specifies requirements relating to the design, manufacture, construction, safety and performance (efficiency and</td>
</tr>
</tbody>
</table>
This standard refers to freestanding and inset room heaters fired with solid fuel (stoves), such as pellets and briquettes. The stoves provide heat into the space where they are installed. The standard "specifies requirements relating to the design, manufacture, construction, safety and performance (efficiency and emission) of inset appliances including open fires fired by solid fuel and provides instructions for them."

The EN 303 is a harmonized European standard referring to wood pellet burning boilers. The performance of Enrad's complete line of boilers (20-110 kW) is tested according to EN 303-5:2012 standards at a laboratory in the region. Upon completion of the new line of stoves in July, the entire pellet stove and boiler sample will be tested in a EU based and accredited laboratory.

All the three market leaders in Kosovo work with the German and Austrian organizations of TÜV, a service provider of integrated safety, quality and technical resource management, to ensure that their products are in line with international safety and other standards.

A number of welders at Ylliterm are certified to weld also oil and gas tanks, which is a prerequisite for exporting these types of tanks to the EU.

3.2.3.1 Bottleneck 1: Awareness about required international standards

This potential bottleneck is linked to the market expansion opportunities identified in 2.1.4.1 below. Before launching interventions aimed at opening up new market opportunities abroad, a detailed investigation must take place to identify all international standards applied on that specific international market. Implementing the identified standards and obtaining corresponding certification for these standards is a prerequisite before any international marketing activities can commence.

1.9 3.2.4 Distribution

Enrad will sell its new line of pellet stoves directly to customers through its own sales points on the domestic market, which are already involved in the promotion, sales and service of the company's larger boilers.

Metali and Ylliterm are selling their smaller boilers and industrial boilers directly to end customers in both the private sector in Kosovo. Ylliterm also supplies public institutions in Kosovo.

Both Ylliterm and Metali have export experience and a strong desire to expand their business internationally. However, both are exporting to markets such as Germany, Austria and Italy through traders (middlemen) in Greece and Germany rather than directly to the final client. Often the middlemen request a too high commission, which makes the final product price uncompetitive.

Gorenje, as a large importer of pellet stoves and boilers, sell directly to end customers through its shop in Pristina and other sales points across the country.
1.10 3.2.5 Consumption

All three interviewed market leading stove and boiler producers believe in a continuous and rapid growth in the pellet market in Kosovo, as a result of more and more people and public institutions turning to pellets as an viable and cost-effective new source of energy.

As can be seen from the table below, Enrad is expecting sales growth in the stoves and boiler markets. In fact, the company is launching a line of pellet stoves targeting the residential market in Kosovo primarily.

Both Metali and Ylliterm were more hesitant in projecting their own sales growth using specific targets than Enrad. However, both companies highlighted, in general terms, a great potential for sales growth outside of Kosovo for their production of industrial boilers.

<table>
<thead>
<tr>
<th>Company</th>
<th>Year</th>
<th>Stoves (pcs)</th>
<th>Boilers (pcs)</th>
<th>Industrial boilers (pcs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENRAD</td>
<td>2014</td>
<td>-</td>
<td>1,000</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>500</td>
<td>1,500</td>
<td>-</td>
</tr>
<tr>
<td>METALI</td>
<td>2014</td>
<td>-</td>
<td>300</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>-</td>
<td>-</td>
<td>50</td>
</tr>
<tr>
<td>Ylliterm</td>
<td>2014</td>
<td>-</td>
<td>400</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The import of pellet stoves have been relatively stagnant during the last three years at approximately € 3.3 million per year in total. (Customs Agency of Kosovo, 2015) This could be a reflection of the local stove and boiler producers’ ability to compete with imports.

Also, no value chain stakeholder challenged the accuracy of the import data supplied by the Customs Agency. This is contrary to the pellet import data, which the large majority of stakeholders believed to be inaccurate and significantly lower than reality on the ground.

3.2.5.1 Opportunity 2: Domestic and International market expansion

Again, the fact that the pellet market is growing and is expected to grow even faster in the near future, according to key stakeholders in the pellet and pellet stove value chains, clearly creates a favorable situation with increasing demand for their products among the local stove and boiler manufacturers.

Efforts to further raise awareness among end customers (residential and public institutions) about the benefits of pellet burning as an alternative source of energy, will indirectly create a growing demand for pellet stoves and boilers on the Kosovo market.

On the international markets, interventions aimed at strengthening the managerial capacities of the metal-processing companies to operate internationally, and eradicate the need for middlemen in international business ventures, have the potential of boosting order intake, production and jobs creation.

The owners and managers of all three of the metal-processing companies are confident in the technical capabilities of their production processes, including operational outputs and quality of the human resource, to the extent that they believe the quality of their final
products can fulfill the requirements of firms in the EU. Or as one company owner put it “all we need is the opportunity to show that we can do it!”

Unfortunately, as a result of limited international trade skills and experience, the firms are often dependent on middlemen, many of whom are not from the metal-processing sector themselves and as a consequence are not capable of properly representing the Kosovo companies, let alone selling in their products and production capacities.

By-passing the middlemen and identifying new potential clients on specific geographical markets (German speaking Europe), and approaching these new sales opportunities in a professional manner would potentially lead to test orders and future growth in order intakes.

4. The Environment

- 4.1 Policy, legal, and regulatory environment

Within the policy, legal, and regulatory environment, the private companies (pellet and pellet stove manufacturers) highlighted a number of issues that negatively affect and constrain the performance and competitiveness of individual companies, and the overall growth of the value chains.

1.11 4.1.1 Concessions to clean state owned forest

As mentioned earlier in this report, a rapid growth of the pellet value chain will require a sustainable supply of wood materials. A large number of pellet producers are relying on wood materials from cleaning of forests, as their primary raw material source. The current legislation limits the number of years that a concession for cleaning of state forest can be issued. A company with limited access to the forest will tend to think short-term and attempt to maximize the output, often leading to uncontrolled and excessive logging with obvious negative impact on the forest and the environment. A large number of pellet producers expressed the opinion that one way to deal with the negative consequences of ‘over-cleaning’ would be to extend the concession period, in line with good practice from other countries. This would incentivize the companies to think long-term about the use of the forest resources and to make the necessary investments to manage the forest in a professional manner.

Mr Ahmeti of the Forest Agency explained that the Ministry of Agriculture, Forestry and Rural Development is currently in the process of drafting a new Law on Forests. In Article 12 of the draft law, “Leasing of forest land”, the period of concessions) in the new law The new law, including cleaning concessions, expanding the concession period from one to up to ten years. The new law is in the final stage of drafting and will be submitted to parliament in July. It expected that the law will be discussed and approved in September, 2015.

Under a 10-year concession agreement, the concession company and the Forest Agency will decide and agree upon the exact volume of wood (m3) that can be cleaned during the entire ten years period. The final volume will depend on the specifics of the forest, types of trees, etc.

1.12 4.1.2 Return of VAT

A number of interviewed companies mentioned a problem with the return of VAT on imported articles and components embedded in the final product that is often exported. The Law
Nr.03/L- 146 on value Added Tax (VAT), in article 40, states that VAT refund claims for exports are eligible, ‘provided that the following conditions are met” by the company:

- The export transactions represents at least 25% of the total transactions with entitlement of VAT input deduction and the amount of VAT credit exceeds five thousand (5000) € at the end of the tax period;
- The taxable person complies with all applicable customs and VAT provisions, and
- All VAT returns and other tax returns for all past periods are submitted.

However, while the law is clear and gives the companies the right to claim a refund of the VAT upon export, the implementation of the legislation is, according to some of the interviewed companies, less clear. Rather, the practical process of claiming the VAT refund is so cumbersome and time-consuming that companies often chose not to apply for the return of the VAT at all. This “extra cost of doing business” is then added to the company’s cost calculations, and most likely result in a higher sales price on the final product.

1.1.3 Horizontal cooperation among companies

Few of the interviewed companies are members of any business support organization, such as Chambers of Commerce and Business Associations. A number of company owners stated that they could see no benefit in membership. Horizontal cooperation among companies in the two value chains is a rarity. In fact, the companies appears to know very little or nothing about each other. Dialogue among companies is very limited. Other companies in the value chain are perceived foremost as competitors, and the general attitude towards other actors in the value chain is one of lack of trust and respect.

At the same time, it is relatively easy to identify business development issues, which should be of common interest to the companies in the two value chains, yet where individual actions are less appropriate and where collective action is the most potent way forward. For example, there is an overall necessity to optimize the production of pellets, as a means of increasing outputs and improving product quality. Offering consultancy support on an individual company basis is not a cost-effective method. Rather, a combination of group training in production optimization followed by specific in-company consultancy projects would offer a more cost-effective option.

Identifying the core opportunities and challenges of the two value chains, and taking actions to strengthen the overall performance of the value chains, are in the end of the day the responsibility of the companies themselves. In order to get to the stage that the companies start to refer to each other as potential cooperation partners rather than competitors, the company owners and managers must first of all to get to know each other a little better. For this to happen, the space and time must be created for them to meet more often. This does not mean that a sector specific association should be established, as a means of bringing the value chain actors together in a formal way. Rather, the initial steps of business-to-business dialogue and networking should be of a more informal nature.

- 4.2 Access to finance

“The average costs of the pellet stoves for the consumer can range from 58.33 to 115 Euro per kWh (depending on size and origin) which may be an impediment to adoption for low income households.” (AUK:2015) While it is true that the average pellet stove is more expensive than a traditional wood stove, it was the view of Mr. Taulant Rexhepi of Enrad that price is the deciding factor in only 20-30%. The core reason why people mainly residing in the villages are not considering pellet boilers is the easy (and possibly free)
access to wood they currently enjoy. Also, the price of pellets was higher in the past, while for the last couple of years the pellet price has fallen. Today, 90% of the boilers sold in Kosovo are with combined systems, which mean that the basic fuel is wood, but a pellet storing facility and pellet burner can be easily attached. In this way, the customer can switch between the two fuel types in response to the fluctuating cost of fuel.

The KOSEP initiative, based on EBRD’s “Sustainable Energy Finance Facilities” (SEFF) model, offers the disbursement of credit lines to local partners banks (TEB) and microfinance institutions (AFK, KRK) for investments in renewable energy and energy efficiency, including the purchase of pellet stoves and boilers. Until June 2015, KOSEP has lent €480,776 for the purchase of 135 biomass boilers (average loan amount: €3,561). KOSEP representative, Mr. Besim Islami also foresee a great and growing demand for pellet stoves/boilers on the Kosovo market.

Every one of the interviewed pellet producers highlighted a need for additional financial support to invest in machinery and equipment, as means of boosting their production capacities. No company mentioned the need for assistance in obtaining a bank loan rather the focus was on receiving a grant.

To what extent additional machinery and equipment constitute the solution to the most pressing bottleneck in an individual production process warrants further analysis. In more cases than one, the available production equipment is clearly capable of producing much larger quantities than current levels. However, for the production output to increase the production process must be more optimized and better managed, which in turn will reduce the risk of regular breakdowns in production.

Thes-ari was more specific in identifying investment need for a mobile cutting & milling machine to make the forest cleaning process for efficient. Interestingly, it was proposed by Thes-ari that this specific equipment could be used collectively, as the need for this type of equipment was not 24/7 and whole year around. While one company could use it for 2-3 weeks while cleaning a forest area, the machinery could then move on to be used by another company for the next 2-3 weeks, and so on.

Interestingly, none of the three pellet stove/boiler manufacturers mentioned the need for additional financial support. Their focus was primarily on the need for continuous market expansion, especially internationally.
5. The Findings, Constraints and Opportunities

Rapidly growing demand for pellets, as an alternative fuel, among both residential consumers and public institutions is resulting in a buoyant market for both pellets and pellets stoves/boilers in Kosovo.

Consequently, there are clear market opportunities available to Kosovo companies throughout the pellet and pellet stove/boiler value chains. In addition, for the pellet stove and boiler manufacturers there is also a clearly defined opportunity to expand exports.

However, to successfully seize these market opportunities, and at the same time fend off the import of pellets and pellet stoves/boilers on the domestic market, the Kosovo companies (the pellet producers in particular) must first address a series of significant challenges.

The bottlenecks to a more rapid and sustainable growth of the pellet value chains have been discussed in more detail above (link to 3.1 and 3.2), but in summary the constraints to growth in the pellet value chains are:

- Shortage of raw materials in Kosovo
- Low levels of productivity
- Locally produced pellets do not adhere to international quality standards
- Delivery systems and transport costs

In the pellet stove and boiler value-chain the constraints to growth are less than in the pellet value chain, there is still a need to ensure that the companies are aware about required international standards for their products. Without the required international standards being implemented in the companies and the processes certified by accredited institutions in the EU, the export to EU markets will not be possible.

There is much to be gained among the pellet stove and boiler manufacturers by further optimising their production units and processes. By optimising production both output and quality gains can be made, improving the overall competitiveness of the company, and benefiting the final customers. Finally, all three of the interviewd pellet stove/boiler manufacturers are active on regional and EU markets, and are keen on expanding the export share of their respective businesses.

Beyond the opportunities and challenges identified among the individual private companies in the two value chains, the business environment offers its own challenges. In regards to the supply of raw materials from the forests in Kosovo, there is a need to extend the duration of concessions for sanitary cleaning of forests, allowing for private companies to make long-term commitments to proper forest management and to make the necessary investments to manage the forests in an optimal and profitable way. The new Law of Forests is directly addressing this issue.

Other identified issues in the business environment affecting the overall development of the value chains refer to difficulties in refunding the VAT and the lack of horizontal cooperation among companies in the value chains. On the issue of access to finance, the need for additional financial resources appears to be more common response among the smaller operations, while the larger companies are more concerned about market expansion.

As a whole the two value chains would benefit from the design and launch of a promotional campaign. The focus of the campaign should be on raising awareness among consumers and households about the benefits of using pellets as a viable source of energy, highlighting its
advantages compared to other energy sources, such as wood, electricity and gasoline, in both price and energy outputs. The campaign should introduce and promote the availability of Kosovo made pellets and pellet stoves/boilers, as alternatives to imports, and stress how converting to using pellets will benefit both the family budget and the environment.
6. The Action Plan

Based on the above mentioned and discussed findings, observations, opportunities and challenges in relation to the current status of the two value chains for pellets and pellet stoves/boilers, an action plan is proposed. The action plan consists of a series of individual interventions designed to support the development and growth of individual companies as well as the value chains as a whole.

The action plan is divided in two parts, part one refers to the pellet value chain while part two concerns itself with the development of the pellet stove/boiler value chain.

- 5.1 Pellet value chain – proposed interventions

1.14 5.1.1 Intervention 1 - Production optimization training and consultancy

There is a clearly identified need for the companies in the pellet value chain to optimize the use of their production units. This is a universal phenomenon within the manufacturing industries. In spite of universal inflation, the price of manufactured goods is dropping by 5% per annum, every year, around the world. Production management's key role is the unending and evolving optimization of all the resources at their disposal whilst meeting the rising aspirations of the market in terms of quality, delivery, service and cost. Companies must perpetually improve to survive and thrive in a world of international competition.

In support of the individual company's drive to improve production and reach higher levels of outputs and quality, we propose a two-step intervention on production optimization.

Step 1 – Formal training in production optimization

The objective of this training activity in Production Optimization is to develop production management skills and techniques in the areas of quality, productivity of labor, materials and machines, production planning and shop floor supervision. This will contribute to improving the competitive advantages of the company against the Kosovo and international competition.

In order to continuously raise productivity of the individual manufacturing unit, the usage of the machinery and equipment must be optimal, guided by a well-tuned production management system, which in turn is integrated into a human resource management system. The importance of professional cost-calculation cannot be overestimated, especially for the manufacturing industries. There is general lack of awareness concerning the link between accounting, budgeting and cost calculation, and the overall performance of the enterprise.

Sample of training program in Production Optimization

Day 1 and 2 – Strategic

- Operations Optimization – through Business Process Re-engineering to decide the macro strategies that will lead to continuous improvement
- Financial Optimization – through Costing and Working Capital minimization

Day 3 and 4 – Technical

- Quality Optimization – through design, choice of processes, Kaizen, Taguchi and TQM approaches
- Material Optimization – through design, choice of raw materials and their prior processes, purchasing strategies, reduction of scrap and waste
- Technology Optimization – through evolution of current technology, low-cost add-ons, new technology that combines many old processes
• Innovation management as a productivity improvement objective

**Day 5 and 6 – Use of people**

• Labor Time Optimization – through methods and time study, norms and incentives
• Utilization and Delivery Optimization – through Production Planning and Control using the techniques of Long Term Planning, Short Term Planning, Provisioning, Progress, Stock Control and Management Controls
• People Optimization – through Supervisory Development and Operator Training

The learning objectives of the training program is to make the participants familiar with the 8 areas of production optimisation (operations, financial, quality, material, technology, labour, utilisation and delivery as well as people), and for them to be able to apply new production optimization ideas and methods within own enterprise operations and production process.

**Step 2 – In-Company Project (implementing production optimization ideas)**

As a direct outcome of the formal training in production optimization, the participants will, most likely, have identified specific areas within their own production process where optimization can occur. The process of implementing the production optimization ideas on firm level in the most effective ways will require some consultancy support.

If interested in such support, the company should develop a In-Company Project description, including short description of the problem(s) identified, actions proposed to be taken and a summary of the expected inputs, outputs and results. The In-Company Project should be a cost-sharing arrangement, where the company invests not only financially, but ensures that the responsible human resource is available to work closely with the project consultant.

**Expected results of intervention 1**

• Production management skills enhanced among pellet producers
• Productivity increased among individual pellet producers

**1.15 5.1.2 Intervention 2 – Introduction and Implementation of International Standards**

There is a clearly identified need for the companies in the pellet value chain to think about product quality in more structured terms. In simple terms, this means to move from verbal to written forms of quality control and quality management. To lead and operate a company successfully it is necessary to direct and control it in a systematic manner according to established and continuously reviewed processes and methods. Quality Management Systems (QMS) help determine how well the company operates across different departments and if improvements are needed in certain company operations to enhance customer satisfaction and company performance.

In support of the individual company’s drive to improve product quality and achieve higher levels of consumer satisfaction, as well as improve overall performance of the company, we propose a two-step intervention on the quality management systems.

**Step 1 – Formal training in Quality Management Systems**
The main aim of this step is to provide guidelines for the establishment of quality management systems for the pellet producers in Kosovo. The objective of the Management Quality System activity is to ensure that company activities, whether they are organizational (e.g. management and organization) or technical (e.g. specification work, testing, simulation) comply with the Quality Manual and the Quality Plans specific for the company and its pellet production.

### Sample of training program in Quality Management Systems

#### Day 1: Quality Policy & Objectives, Quality Management System
- Rationale of QMS, basic concepts and principles
- Introduction to ISO 9000 family (ISO 9000, ISO 9001, ISO 9004, ISO 19011)
- Policy, Objectives, Responsibility for contract quality & quality system

#### Day 2: Customer satisfaction, Management responsibility
- Conformance with ISO 9001: the QMS design to comply with the requirements
- Customer satisfaction
- Management responsibility: management commitment, customer focus, quality policy

#### Day 3: Resource management, product realisation, System analysis and control
- Quality management system planning
- Resource management: human resources, competence, awareness & training, work environment
- Steps and processes of product realization
- Management review
- Measurement, analysis & improvement
- Monitoring & measurement, customer satisfaction, internal audit
- Control of non – conforming product
- Analysis of data and improvement

The learning objectives of the training program are to create a common understanding of QMS basics among the participants, and a general picture of ISO 9000 requirements and guidelines. This will lead the participants to understand better the purpose and implementation of QMS in their own companies. Finally, the participants should be able to, as a direct outcome of the training, to better articulate benefits of QMS implementation for their own companies’ performance and management.

### Step 2 – Introduction of international standards (ENPlus)

As mentioned earlier in this report, the content and quality of the domestically produced pellets cannot currently be confirmed against accepted international standards. There is a lack of awareness among the pellet producers about the exact content of relevant EN standards, including ENPlus.

To overcome this lack of information about the EN standards and ENPlus, there is need to host an intensive learning session for the Kosovo pellet producers. The main aim of this step is to introduce the handbook and guidelines for EN 14961 and ENPlus certification. The objective of the information activity is to ensure that the Kosovo pellet producers understand he linkages between implementation of EN 14961 and ENPlus and the capacity to deliver a constant level of high quality wood pellets, by better controlling the production as well as logistics and delivery procedures.

### Sample of training program in EN 14961 and EN Plus
The learning objectives of this information activity are to create a better technical and practical understanding of relevant international standards, such as EN 14961 and ENPlus among the participants. This will lead the participants to a higher level of appreciation for product quality issues and implementation of relevant international standards in their own companies. Finally, the participants should be able to, as a direct outcome of the information sessions, to better articulate benefits of EN 14961 and ENPlus implementation for their own companies’ performance and management.

Step 3 – Testing of pellets

As highlighted earlier in this report, the content and quality of the domestically produced pellets cannot be confirmed against accepted international standards. In order to establish the “as-is” situation there is a need to test a sample of pellets from each interested Kosovo pellet producer in line with EN standard 14961 normative properties.

Dr. Fadil Musa of the local laboratory Sara & Mete (ISO 17025 accredited) has confirmed that his laboratory has the technical capacity to test for 90% of the properties required in EN 14961. Sara & Mete’s main areas of expertise and experience are in the testing of food and beverages, and agriculture related materials, such as soil analysis. The laboratory also has experience in analyzing wood products.

Dr Musa proposed a rigid sample collection process, managed by inspectors linked to the laboratory. Two kilograms of sample will be enough to measure the properties of the pellets. Samples should be taken from different batches of production, not only from one batch.

Based on the test results a gap analysis could be completed, identifying areas within the production process where practical interventions are necessary in order for real improvements in the quality and consistency of the pellets are achieved.

The testing of pellets is voluntary, but a formal requirement for Step 4 below.

Step 4 – In-Company Project (implementing EN 14961 and ENPlus)
As a direct outcome of the testing of the actual properties of the individual producer’s pellets, the respective company will become aware of any gaps existing between the company’s pellets and the international standards. Based on the gaps analysis areas of interventions and specific actions can be identified, resulting in an intervention plan for the implementation of EN 14691 and ENPlus. The process of implementing the international standards on firm level in the most effective ways will require great commitment from the company as well as consultancy support.

If interested in such support, the company should develop a In-Company Project description, including short description of the problem(s) identified, actions proposed to be taken and a summary of the expected inputs, outputs and results. The In-Company Project should be a cost-sharing arrangement, where the company invests not only financially, but ensures that the responsible human resource is available to work closely with the project consultant.

**Expected results of intervention 2**

- Quality management skills enhanced among pellet producers
- Quality Management Systems in place among individual pellet producers
- Understanding of relevant international standards (EN 14961 and ENPlus) enhanced among pellet producers
- Pellets produced by individual pellet producers in Kosovo tested in line with EN 14961
- EN 14961/ENPlus implemented by Kosovo pellet producers

1.16 5.1.3 Intervention 3 – Horizontal cooperation among companies

5.1.3.1 Establishment of Experience Exchange Group (EEG)

In one way, the training, consultancy and information activities, proposed in interventions 1 and 2, are one-off interventions, aimed at assisting the Kosovo companies in working in the right direction. However, it is important to be realistic about what fundamental changes can be implemented in a private enterprise within a relatively short time span. Questions will arise among the company owners/managers after the training and consultancy have been completed. There is a need for an on-going, follow-up forum to offer viable and sustainable support to the companies in the two value chains. The Experience Exchange Group (EEG), a model for dialogue among peers, networking and learning is one such option.

Learning is a long-term investment. Learning in companies takes place basically in three ways:

1. Learning by participating in traditional **workshops** (training on production optimization, Quality Management Systems and introduction to EN), where the trainers have the initiative;
2. Learning in **In-Company Projects**, where the initiative often is taken by the consultant;
3. Learning by participating in **networking**, where the initiative and the responsibility for the learning is taken by the participants themselves when starting exchanging experience with other business owners and managers.
Dialogue with other company managers in the value chain can be a very effective way of becoming aware of personal and company development needs. Taking part in an EEG network also has a large potential for uncovering business opportunities not considered before. All networking activities demand two things: trust and responsibility among the participants. Networking requires trust between the partners in order to feel free to share experience and point of views and is based on the principle ‘to be open inside and close outside’ the group.

And networking requires responsibility by the individual in the group – responsibility for being active and creating results in the group. Unfortunately, these two elements are often scarce commodities in transition economies. In other words, networking cannot just be expected to grow without being carefully nourished. And without networking, this learning approach cannot be effective. The EMPOWER project is ideally placed and equipped to fill this role as initial facilitator and motivator within the EEG approach for the pellet value chain.

Networks do not necessarily function only because of a professional need. An owner/manager of a smaller company often lacks peers to discuss all sorts of problems with. This is particularly true for companies located outside of the capital Pristina. There is in other words also an important social dimension of getting company managers to engage in networking activities. Networking and especially EEG are good and cost-effective tools for supporting the business development of the pellet value chain in Kosovo.

Practical experience shows that networks are often less effective if they are designated from outside. Therefore, it is the company owners and managers who should have the lead. The first step in the formation of the EEG will be information meetings for interested company owners and managers. Again, EMPOWER staff is ideally placed to facilitate the establishment and initial hosting of the Pellet EEG in Kosovo, assuming that there is adequate company buy-in to the idea to establish a group.

In terms of inputs from the EMPOWER project, the EEG require much less than other learning activities but the intensity and engagement from participants is often much higher. The basic objective of the EEG is to develop the individual personality and management skills for the benefit of the companies.

The Pellet EEG need to choose two coordinators among the members (chair and vice chair person) who are responsible for planning and running the meetings for the next half a year. The EGG members should also develop and agree on a Charter, describing the basic principle for running the EEG – members and the coordinators responsibility and obligations, how to chose new group members, when and where to have meetings, and an agenda for meetings. This Charter is very helpful to avoid endless discussions about the vision and mission of the EEG.

One EMPOWER project staff member and an international consultant should initially be attached to the Pellet EEGs with the purpose to support the coordinators in the planning and implementing of the initial EEG meetings. It is important to keep supporting the EEG in planning and implementing their future meetings – until the groups feel themselves sustainable, and will allocate the necessary resources for that purpose. The EMPOWER project could also support the EEG by supplying them with high calibre guest speakers, to spur discussions of business development and management issues relevant for the pellet value chain.
It will be up to the Pellet EEG itself to decide when, where and how to meet, but it is expected that regular meetings are hosted in the late afternoon and lasting for 2-3 hours. A typically EEG meeting could have the following format:

<table>
<thead>
<tr>
<th>Time schedule</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.00 – 17.15</td>
<td>Activities Introduction</td>
</tr>
<tr>
<td></td>
<td>Welcome by the Chairperson; Information: Since last meeting</td>
</tr>
<tr>
<td></td>
<td>Subjects under ‘Any Other Business’; Introducing of the Theme</td>
</tr>
<tr>
<td></td>
<td>and the Speaker for this afternoon</td>
</tr>
<tr>
<td>17.15 – 17.30</td>
<td>Five Minutes Speak</td>
</tr>
<tr>
<td></td>
<td>Five minutes free speak done by one of the participants in turn</td>
</tr>
<tr>
<td>17.30 – 18.00</td>
<td>Presentation of the Host</td>
</tr>
<tr>
<td></td>
<td>Round trip at the enterprise, if relevant</td>
</tr>
<tr>
<td>18.00 – 19.00</td>
<td>Theme of the Evening</td>
</tr>
<tr>
<td></td>
<td>Introduction by the Speaker (15 minutes); Discussions and Exchange of Experience (45 minutes); Summering up by chair person (15 minutes)</td>
</tr>
<tr>
<td>19.00 – 19.15</td>
<td>Finalising the Meeting by the Chairman</td>
</tr>
<tr>
<td></td>
<td>Any Other Business; Next meeting: where and when? Theme and Speakers at the next meeting</td>
</tr>
<tr>
<td>19.15 – 20.00</td>
<td>Social event</td>
</tr>
<tr>
<td></td>
<td>Dinner and informal talk</td>
</tr>
</tbody>
</table>

The progress of the Pellet EEG will be evaluated through direct interviews with a sample of participants. The EMPOWER project could assume a key role in the monitoring and evaluation of EEG activities. There should be no reporting on the content of the EEG meetings as this information is confidential, but the review should highlight the level of satisfaction among the participants from the learning model that the Pellet EEG represent.

**5.1.3.2 Other collective actions**

The Pellet EEG is a platform, bringing together companies active in the value chain in an informal way, to discuss issues that affect their individual businesses and the sector as a whole. As such, the EEG can act as the forum where the need for collective actions are identified and the willingness of EEG members to actively plan and implement collective actions are managed.

As reported earlier, there are a number of issues in the business environment, which affect the value chains. These issues could ideally be addressed at the Pellet EEG meetings and activities could be designed to address these issues. This refers directly to the VAT refund issue and the necessity to advocate relevant public institutions for an improvement in the practical implementation of the VAT legislation.

Another issue of interest to all actors in the pellet and pellet stove/boiler value chains is the need to further and wider promote and raise awareness among the benefits of converting to pellets as a viable, efficient and cost-effective source of energy. This nation-wide campaign should be a collective action to promote the sector rather than individual companies, yet the
campaign must be driven and managed by the individual companies. This means that the companies must agree among themselves on the objectives of the campaign, the promotional message and the requirements that each company needs to fulfil in order to participate.

It can be expected that as an outcome of the regular meetings, the members of the Pellet EEG will identify a number of new issues that they would like to address collectively. The Pellet EEG may then solicit EMPOWER project for ad hoc support to implement specific activities, for example the preparation of concept papers for advocacy on legislative and regulatory changes.

### Expected results of intervention 3
- Pellet EEG established and meeting regularly
- Issues of common concern identified by EEG and collective actions taken

### 5.2 Pellet stove/boiler value chain – proposed interventions

#### 1.17 5.2.1 Intervention 1 - Production optimization training and consultancy

The three interviewed pellet stove and boiler manufacturers all possess extensive and at times quite sophisticated machinery and equipment parks. The production of pellet stoves and boilers include elements of labor-intensive work, which in turn highlights the linkage between qualified workers and product quality. In order to maintain a high level of product quality, the companies are committed to a process of continuous learning for existing staff, and new staff goes through rigorous on-the-job training. Enrad and EMPOWER are now cooperating on an internship activity, ensuring an annual supply of qualified welders and other manufacturing staff.

However, manufacturing is a constant strive for new technical solutions, innovation and methods, with the aim of further improving the efficiency and productivity of the production. Companies must perpetually improve to survive and thrive in a world of international competition. The key role of production management is evident among the manufacturers of pellet stove and boilers in Kosovo as well.

In support of the individual company’s drive to improve production and reach higher levels of outputs and quality, we propose that the pellet stove/boiler manufacturers participate in the production optimization activity, described in detail above in 5.1.1. This include participation in both the formal training in production optimization (step 1) and implementation of an In-Company Project (step 2)

### Expected results of intervention 1
- Production management skills enhanced among pellet stove/boiler manufacturers
- Productivity increased among individual pellet stove/boiler manufacturers

#### 1.18 5.2.2 Intervention 2 - Introduction and Implementation of International Standards

The interviewed pellet stove/boiler manufacturers are all applying a systematic approach to their established and continuously reviewed processes and methods. There is a Quality
Management Systems (QMS) in place helping the managers to determine how well the company operates across different departments and if improvements are needed in certain company operations to enhance customer satisfaction and company performance. Consequently, there appear not to exist the same need for QMS training among the pellet stove/boiler manufacturers as for the pellet producers. However, the pellet stove/boiler manufacturers will be invited to participate in the QMS training described in 5.1.2 above.

Here the focus will be on the dissemination of information about the international standards structuring the production and sales of pellet stoves and boiler, such as EN 13229, EN 13240 and EN 303. EN 303 is a harmonized European standard referring to wood pellet burning boilers.

**Step 1 – Introduction of international standards**

To further expand the understanding and knowledge about EN 13229, EN 13240 and EN 303, there is need to host a learning session for the Kosovo pellet stove/boiler manufacturers. The main aim of this step is to introduce the handbook and guidelines for EN 13229, EN 13240 and EN 303.

**Step 2 – In-Company Project**

In the case any of the participating pellet stove/boiler manufacturers identify gaps between their own production and products in relation to these international standards, the companies may develop individual In-Company Projects describing what actions need to be taken in order to close the gaps. Based on the resulting intervention plan, EMPOWER may offer technical support in the implementation of corrective actions.

**Expected results of intervention 2**

- Understanding of relevant international standards (EN 13229, EN 13240 and EN 303) enhanced among pellet stove/boiler manufacturers
- EN 13229, EN 13240 and EN 303 implemented by Kosovo pellet stove/boiler manufacturers

1.19

1.20 5.2.3 Intervention 3 – International market expansion

The need for more international trade was a top priority among the three interviewed pellet stove/boiler manufacturers. All three show a passionate commitment to metal-processing, have invested and are continuously investing in their production units and workforce. Through already completed exports of boilers the Kosovo manufacturers have proven to international clients that they have the capacity to deliver a product at the ‘right’ price, quality and quantity. With all the internal managerial and production variables more or less in place, production expansion and consequent new job creation is closely linked to the expansion of sales on international markets.

Two of the interviewed companies pointed to the EU as the target market, and more specifically to the German speaking markets of Germany and Austria. In support of the companies drive to expand exports, we propose to organize trade missions. A trade mission is a very pro-active form of direct marketing. It entails that a group of companies travel to a specific export market and hold meetings directly with potential buyers. In order to be effective, the trade missions is preceded by extensive market research, identifying a list of
priority client leads on the specific geographical market. The interviewed pellet stove/boiler manufacturers already possess a list of potential clients.

To further improve the impact of the trade mission, it is recommendable to engage an external consultant, familiar with the specific products (pellet stoves/boilers) and sector (metal-processing) on the specific geographical markets (Germany, Austria, Switzerland), and preferably being a citizen of those countries, which the trade mission is targeting. By engaging an ‘inside wo/man’ from the potential export market, the trade mission will enjoy a ‘door-opener’ effect, as the targeted companies are more likely to open up to a familiar face, rather than complete newcomers from abroad. Also, the external consultant will assist in the selection of the most important buyers to be visited, and will act as a form of guarantee for the quality of the trade mission and its participants in front of the visited companies.

The trade missions should be based on a cost-sharing arrangement, where the company invests not only financially, but ensures that the responsible human resource is available to work closely with the project consultant.

Expected results of intervention 3
- Minimum two trade missions to targeted European markets organized
- Export orders increased leading to increase in production outputs and employment