

**Danas**

# Biomasa

**GORIVO BUDUĆNOSTI**

## BIOMASS - Fuel of The Future



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## Majkl Harvi: Dobrobit za Srbiju

„USAID je uključio biomasu u Projekat za razvoj konkurentnosti jer verujemo da šire korišćenje biomase za proizvodnju energije predstavlja dobrobit za Srbiju. Korišćenje poljoprivredne i drvene biomase može pomoći Srbiji da zadovolji svoje energetske potrebe na način koji je bolji za životnu sredinu, dok istovremeno dovodi do povećanja zaposlenosti u lokalnim zajednicama,” ističe povodom angažovanja ove američke agencije u projektu Majkl Harvi, direktor USAID-a za Srbiju i Crnu Goru.



## Michael T. Harvey: Pure win-win for Serbia

„USAID has included biomass in its Competitiveness Project because we believe that expanding the use of biomass for energy production is a pure win-win for Serbia. The utilization of agricultural and wood waste biomass can help Serbia meet its energy needs in a more environmentally friendly manner, while also helping to create jobs in local communities,” says Michael T. Harvey, USAID Serbia end Montenegro director

*Nova regulativa u Srbiji doprinosi investicijama od oko 200 miliona evra u obnovljive izvore energije, a naročito u korišćenju biljnih i šumskih produkata*

## Biomasa pokreće štednju i zapošljavanje

Srbija je u dobroj poziciji da iskoristi povećano interesovanje tržišta za obnovljive izvore energije, razvijajući tržište biomase. Biomasa se sastoji od biološkog materijala, koji se dobija iz drveta, otpada i alkoholnih goriva. Srbija samo u poljoprivrednom i drvnom otpadu ima potencijal ekvivalentan količini od 2,7 miliona tona nafte. Izvori biomase u Srbiji čine 63 odsto ukupnog potencijala obnovljivog izvora energije u zemlji, budući da je 30 odsto njene teritorije prekriveno šumama, a 55 odsto je pod obradivim površinama.

Biomasa je jeftin izvor energije za grejanje komercijalnih i stambenih prostora, za kojim je potražnja na tržištima Evropske unije u porastu. U januaru 2008. godine Evropska komisija je izdala paket mera "20 - 20", koji bi trebalo da bude sproveden do 2020, a kojim se predlaže 20 odsto smanjenja emisija gasova sa efektom staklene bašte na teritoriji EU i 20 odsto povećanja učešća obnovljivih izvora energije u ukupnoj potrošnji energije. Oba cilja treba da budu ispunjena do 2020.

Biomasa nudi značajne ekonomske dobiti. Ima potencijal da zadovolji 30 odsto energetske potrebe Srbije, a u isto vreme nudi zaposlenje u lokalnim zajednicama u šumskim predelima, koji, između ostalog obuhvataju Prijepolje, Priboj, Kuršumlju, Majdanpek, Kučevo, Žagubicu, Bor i Boljevac. Pošto se ova mesta



*New Serbian policy contributes to the 200 million euro investments in the renewable energy sources, particularly in the herbal and forest products use*

## Biomass Stimulates Savings and Employment

Serbia is well positioned to take advantage of growing commercial interest in renewable energy by developing its biomass industry. Biomass consists of biological material derived from wood, waste and alcohol fuels. Serbia boasts a supply of agricultural and wood waste biomass that is equivalent to 2.7 million tons of oil. Serbia's biomass resources represent 63% of total renewable energy potential in the country as its territory comprises 30% forest and 55% arable land.

Biomass is a low cost commercial and residential heating source and is increasingly in demand by EU markets. In January 2008, the European Commission published the 20 20 by 2020 package of measures, which proposes a 20% reduction in EU greenhouse gas emissions and a 20% increase in the proportion of final energy consumption from renewable sources. Both targets are to be reached by 2020.

Biomass offers considerable economic benefits. It has the potential to meet 30% of Serbia's energy needs while offering employment benefits to local communities in forested regions, which, amongst others, include Prijepolje, Priboj, Kuršumlja, Majdanpek, Kučevo, Žagubica, Bor and Boljevac. Since these communities are located in some of the most underdeveloped regions in Serbia, employing the local population in activities related to wood waste could lead to a significant increase in jobs. Moreover, wood waste biomass could potentially serve as a substitute for fossil fuels, which Serbia currently imports. Biomass utilization also opens the door to technology development, particularly for Serbian firms that produce stoves and boilers for the residential market and those that manufacture large industrial boilers.

The utilization of biomass also benefits the environment. Biomass decreases greenhouse gas emissions, substituting the use of traditional fossil fuels, which are polluting. Biomass contributes to better wood waste management, which prevents river and soil pollution, and increases the share of renewable energy consumption in Serbia.

For these reasons, the USAID Serbia Competitiveness Project assists biomass firms to conduct public awareness campaigns and facilitates the

nalaze u najnerazvijenijim regionima Srbije, zapošljavanje lokalnog stanovništva u poslovima vezanim za drveni otpad moglo bi dovesti do značajnog povećanja stope zaposlenosti. Štaviše, drvena biomasa mogla bi poslužiti kao zamena za fosilna goriva, koje Srbija trenutno uvozi. Korišćenje biomase otvara vrata razvoju tehnologije, posebno za srpske firme koje proizvode peći i kotlove za stambene objekte, kao i za one koji proizvode velike industrijske kotlove.

Korišćenje biomase doprinosi i zaštiti životne sredine. Biomasa se smanjuje emisije gasova sa efektom staklene bašte, tako što se njome zamenjuju tradicionalna fosilna goriva, koja zagađuju okolinu. Korišćenje biomase doprinosi i boljem upravljanju drvnim otpadom, čime se sprečava zagađenje reka i zemljišta, a povećava udeo u korišćenju obnovljivih izvora energije u Srbiji.

Iz ovih razloga, USAID Projekat za razvoj konkurentnosti Srbije pomaže kompanijama koje se bave biomasaom da sprovedu kampanje podizanja svesti o njenoj upotrebi i da pristupe mehanizmima finansiranja. Projekatom je kroz ove aktivnosti pružena podrška firmama, predstavljanim u ovoj publikaciji, da povećaju prodaju kotlova i peleta. Samo tokom protekle godine, zahvaljujući ovim naporima prodato je oko 250 kotlova i peći na lokalnom tržištu. Projekatom je takođe pomognuta američka kompanija koja se bavi upravljanjem šuma i koja je nakon toga investirala devet miliona dolara u fabriku peleta u Srbiji.

USAID Projekat za razvoj konkurentnosti Srbije takođe radi na poboljšanju postojećih regulativa za zaštitu životne sredine, kako bi se promovisao veći stepen iskoristivosti biomase u Srbiji, s obzirom na to da je za veće iskorišćenje drvnog otpada potrebna okvima regulativa koja više podstiče razvoj tržišta. Projekat i drugi relevantni partneri učestvuju u pružanju sugestija Vladi, što će olakšati sprovođenje mera koje promovišu obnovljive izvore energije u Srbiji - uključujući biomasu.

Eksplcitnije govoreći, Srbija bi trebalo da odredi ciljeve u oblasti obnovljivih izvora energije, slične onima koji već postoje u Evropskoj uniji, i da završi i usvoji podsticajne mere za industrijske kotlove na biomasu i za one koji se koriste za zagrevanje stambenih prostorija. Ove mere mogu biti inkorporirane u Akcioni plan o biomasu, koji trenutno razvija Ministarstvo energetike i rudarstva i koji će biti dat na usvajanje u drugom kvartalu 2010.

### *Vlada mora da se osvrne na težak proces dobijanja dozvole za izgradnju fabrika za obnovljive izvore energije, kako bi olakšala pristup ovom sektoru*

Kao prvi kritičan korak, Vlada je nedavno usvojila set podzakonskih akata kao bi podstakla veće korišćenje obnovljivih izvora energije. Ova regulativa obuhvata tri Vladine odluke vezane za status privilegovanih proizvođača struje, fid-in tarife (uključujući ugovor o kupovini električne energije) i reviziju Strategije za energetiku, kako bi se podstakao veći stepen iskoristivosti potencijala obnovljive izvore energije u Srbiji. Fid-in tarife su finansijski podsticaj kojim je Vlada omogućila potencijalnim proizvođačima "zelenih" električne energije (privilegovani proizvođači struje) da učine projekte iz obnovljivih izvora energije ekonomski izvodljivim i finansijski privlačnim. Ugovor o kupovini električne energije će obavezati Elektroprivreda Srbije (EPS) da kupuje struju proizvedenu iz obnovljivih izvora energije.

Zajedno sa Vladinom politikom, već pomenuta regulativa će podstaći strane i domaće investitore da ulažu u postrojenja koja koriste obnovljive izvore energije kao što su vetar, male hidrocentrale, biomasa, solarna energija, geotermalna energija, biogas i drugi obnovljivi izvori za proizvodnju električne ili toplotne energije. USAID Projekat za razvoj konkurentnosti Srbije i Ministarstvo za energetiku i rudarstvo očekuju da će ova regulativa doprineti da se ostvare investicije od oko 200 miliona evra u obnovljive izvore energije do kraja 2012. Da bi se ovaj potencijal iskoristio, Vlada Srbije mora takođe da se osvrne na težak proces dobijanja dozvole za gradnju fabrika za obnovljive izvore energije kako bi olakšala pristup ovom sektoru u nastajanju.

Kako se Srbija približava Evropskoj Uniji, obnovljivi izvori energije će privući kako domaće tako i strane investitore. Korišćenje obnovljivih izvora energije će prikazati drugačiju sliku Srbije kao zemlje koja je napredna u ovoj oblasti. USAID Projekat za razvoj konkurentnosti je posvećen pružanju podrške Srbiji da postane regionalni lider u korišćenju obnovljivih izvora energije.



Viliam E. Siz, direktor - USAID Projekat za razvoj konkurentnosti Srbije

creation of access to finance mechanisms. The Project has through these activities supported the firms enclosed in this publication to increase sales of boilers and pellets. In the last year alone, approximately 250 boilers and stoves were sold in the residential biomass market in Serbia through these efforts. The Project also supported a U.S. forest management company that subsequently invested \$9 million in a pellet manufacturing plant in Serbia.

The USAID Serbia Competitiveness Project also works on improving the existing policy environment to promote greater utilization of biomass in Serbia as better utilization of wood waste requires a policy framework that further enhances market development. The Project and other stakeholders are involved in providing input to the Government that will facilitate the implementation of measures that promote renewable energy resources in Serbia - including biomass. Specifically, Serbia should set

renewable energy targets similar to those existing in the EU, finalize and adopt incentives for residential and industrial biomass boilers. These measures can be incorporated into a Biomass Action Plan currently being developed by the Ministry of Mining and Energy and presented for adoption in the second quarter of 2010.

### *The Government of Serbia must address the cumbersome permit process for construction of renewable energy plants in order to be investor friendly in this sector*

As a critical first step, the Government has recently adopted a set of secondary legislation to encourage greater use of renewable energy resources. This legislation includes three government decrees on the privileged power producer status, feed in tariffs (including the power purchase agreement) and a revision of the energy strategy to stimulate greater utilization of Serbia's renewable energy potential. Feed in tariffs are financial incentives provided by the Government to a potential green electricity producer (privileged power producer) to make renewable energy projects economically feasible and financially appealing. A power purchase agreement will oblige the Electric Power Company of Serbia (EPS) to buy electricity produced out of renewable sources.

Together with related government policies, the aforementioned legislation will encourage foreign and local investors to invest in plants that use renewable energy resources such as wind, mini hydro, biomass, solar, geothermal, biogas and other renewable resources to produce electricity and/or heat. The USAID Serbia Competitiveness Project and the Ministry of Mining and Energy expect that this policy will help generate approximately 200 million Euros in renewable energy investments by the end of 2012. To realize this potential, the Government of Serbia must also address the cumbersome permit process for construction of renewable energy plants in order to be investor friendly in this emerging sector.

As Serbia moves closer to the European Union, renewable energy will appeal to domestic and international investors alike. The use of renewable energy will paint a more progressive, carbon-friendly image of Serbia. The USAID Serbia Competitiveness Project is committed to supporting Serbia to become a regional leader in renewable energy use.



U svetu je iskorišćenje biomase za proizvodnju električne energije uobičajeno

USAID Projekat za razvoj konkurentnosti Srbije podstiče upotrebu obnovljivih izvora energije

# Potencijali biomase nedovoljno iskorišćeni

Volter R. Arnhajm, ekspert za obnovljivu energiju, govori o mogućnostima za strana i domaća ulaganja u ove projekte i preprekama koje treba prevladati da se to sprovedi što efikasnije i brže

**P**rojekat za razvoj konkurentnosti Srbije USAID-a, jeste četvorogodišnja inicijativa u vrednosti od 14,7 miliona dolara, koja je pokrenuta oktobra 2007. godine, sa ciljem promovisanja ekonomskog rasta putem značajnog povećanja konkurentnosti srpskih malih i srednjih preduzeća u vodećim privrednim sektorima, sa usmerenjem na povećanje prodaje, izvoza, investicija i otvaranje novih radnih mesta.

U studiji 12 sektora srpske privrede, ovim projektom je ustanovljeno da obnovljiva energija ima značajan potencijal i da bi, uz odgovarajuće regulatorno okruženje, Srbija mogla da ostvari značajne investicije u sektoru. Projekat je sproveo veći broj aktivnosti za promovisanje održivih podsektora u sferi obnovljivih izvora energije. Tu je uključen i razvoj tražnje na domaćem tržištu za biomasom putem informisanja i edukacije javnosti o prednostima korišćenja ovih energenata, kreiranja pristupa mehanizmima finansiranja i unapređenja povoljnog poslovnog okruženja, kako bi projekti obnovljivih izvora energije bili ekonomski isplativi.

Volter R. Arnhajm je član Upravnog odbora "Magellan Midstream Holdings", najdužeg sistema cevovoda prerađenih naftnih derivata u SAD. Prethodno je bio član Upravnog odbora "Spinner Exploration" i finansijski direktor "Mobil Corporation". Gospodin Arnhajm je trenutno ekspert za obnovljivu energiju USAID Projekta za razvoj konkurentnosti. On boravi u Srbiji, kako bi procenio nedavno usvojen Zakon o obnovljivim izvorima energije, kao i načine putem kojih ovako unapređena regulatorna sredina može da doprinese stvaranju prilika za strana i domaća ulaganja u projekte obnovljive energije.

**■ Na osnovu vašeg dosadašnjeg iskustva u Srbiji, kako komentarišite potencijal biomase u Srbiji i koje su mogućnosti za privlačenje stranih i domaćih investicija?**

- Srbija poseduje veliki, ali neiskorišćeni potencijal za obnovljivu energiju. Biomasa predstavlja važan deo tog potencijala. Srbija proizvodi značajnu količinu trine i drvnog otpada u pilanama i fabrikama nameštaja, koji bi mogli da se prerade u visokoenergetski pelet. U Zapadnoj Evropi postoji veliko tržište za ovu vrstu peleta, dok je u Srbiji tržište tek u povoju. Već postoje domaće i međunarodne kompanije

koje ulažu u skladištenje drvnog otpada u Srbiji i njegovu preradu u pelet. Kako se u Srbiji bude razvijala tražnja za njim, verujem da će rasti i ulaganja u ovaj sektor. Srpski proizvođači kotlova su takođe zainteresovani za snabdevanje ovog tržišta, kojim su tradicionalno dominirali međunarodni proizvođači.

Srbija takođe proizvodi i dosta poljoprivrednog otpada, prilikom žetve različitih kultura, koji se može iskoristiti za zamenu fosilnih goriva. Pošto je snabdevanje ove vrste sezonskog karaktera, a troškovi transporta su relativno visoki, postrojenja koja su u blizini izvora snabdevanja verovatno će koristiti ovajak žetveni otpad kao dodatni izvor energije. Određeni broj poljoprivrednih dobara u agrarnom srcu Srbije već primenjuje takvu strategiju. Sa druge strane, uzimajući u obzir ograničen obim resursa i subvencija Vlade koji su neophodni da bi takva postrojenja bila ekonomična, ne predviđam da će investitori pojuriti u Srbiju da grade postrojenja za proizvodnju etanola, za čiju produkciju se koriste takvi poljoprivredni proizvodi i nusproizvodi.

**■ Na koji način će nedavno usvojena politika obnovljive energije (fid-in tarife - državne stimulacije za energiju dobijenu iz obnovljivih izvora, ugovori o kupovini energije...) uticati na razvoj sektora obnovljive energije u Srbiji?**

- Budući da dugo pratim spori razvoj upotrebe obnovljive energije u Srbiji, oduševljen sam usvajanjem ovih stimulacija, mada takve politike ne mogu same da garantuju povećanje ulaganja u obnovljivu energiju. Međutim, jasno je da bi bez toga dinamika razvoja i dalje bila usporena i zaostajala za većinom ostalih evropskih zemalja. Odajem veliko priznanje kreatorima politika o obnovljivim izvorima energije, za koje očekujem da će dovesti do veće energetske sigurnosti, povećanja platnog bilansa, povećanja zaposlenosti i čistije životne sredine u Srbiji.

**■ Šta su po vašem mišljenju glavne prepreke ulaganju u sektor obnovljivih izvora energije u Srbiji?**

## Promotivna i tehnička podrška

USAID Projekat za razvoj konkurentnosti promovise ulaganja u energetska efikasnost i tehnologije energetske efikasnosti kroz podršku proizvodnim kompanijama za sprovođenje energetske revizije, kao i tehničku podršku usmerenu na ostvarivanje pristupa finansiranju za ulaganja u poboljšanja na polju energetske efikasnosti.

## INTERVJU



Volter R. Arnhajm, ekspert za obnovljivu energiju

- Kreatori politika obnovljive energije omogućili su da industrija obnovljive energije u Srbiji procveta. Međutim, svi smo svesni činjenice da će stvarni proces za odobravanje projekata, od ideje za izgradnju postrojenja, do dobijanja dozvole za rad i svih koraka koji se nalaze između ova dva elementa, odrediti dinamiku razvoja industrije i obim investicionog kapitala koji će ona privući. Zemlje Istočne Evrope i Balkana nemaju dugu istoriju u pogledu ekspeditivnog i transparentnog procesa odobravanja projekata. Srbija može da se izdvoji od drugih u regionu ukoliko uspostavi efikasniji proces za dobijanje licenci i dozvola.

**■ Na koji način je globalni sektor obnovljivih izvora pogođen ekonomskom krizom i koje su posledice toga u Srbiji?**

- Globalna ekonomska kriza sigurno nije bila od pomoći sektoru obnovljive energije. Pre svega, cene klasičnih energenata su pale, što je otežalo "hadmetanje" obnovljive energiji u odnosu na tradicionalna fosilna goriva. Ali, možda je još važnije da su banke koje obezbeđuju kredite, kao i sredstva za nove investicije, u velikoj meri iscrpljene. Projekti za koje su sredstva već opredeljena podmakli su u sprovođenju, ali su zato oni preostali, bez opredeljenog kapitala, usporeni, privremeno obustavljeni ili u celini napušteni. Trenutno je prisutan osećaj da je najgori deo ekonomskog pada za nama. Tržišta kapitala počinju da se otvaraju i, na iznenađenje svih, apetiti investitora za novim tržištima poput Srbije, ne jenjavaju. Verujem da bi uz odgovarajuće politike Vlade, uključujući zakonodavstvo i proces odobravanja, i uz adekvatnu projektnu ekonomiju, Srbija mogla da privuče svoj deo razvojnog kapitala za obnovljivu energiju čak i u postojećem ekonomskom okruženju. Ako ovi uslovi budu zadovoljeni, investitori i sredstva će pristizati u velikom broju i obimu.

*The USAID Serbia Competitiveness Project stimulates the use of renewable energy sources*

## INTERVIEW

# The biomass potential insufficiently used

Walter R. Arnheim, a renewable energy expert, speaks about the opportunities for foreign and local investment in these projects and obstacles which should be overcome so that this can be done as efficiently and quickly as possible.

**T**he USAID Serbia Competitiveness Project is a four-year, \$14.7 million initiative launched in October 2007 to promote economic growth by substantially increasing the competitiveness of Serbian SMEs in leading sectors of the economy to increase sales, exports, investment and jobs. In a study of 12 sectors of the Serbian economy, the Project found that renewable energy had significant potential and that, given the right regulatory environment, the country could generate significant investment in the sector. The Project has undertaken a number of activities to promote sub-sectors in renewable energy that are deemed viable, including developing local market demand for biomass through public information and education on the benefits of biomass use, fostering a business enabling environment to make renewable projects economically viable, and creating access to finance mechanisms.

Walter R. Arnheim is a member of the Board of Directors of Magellan Midstream Holdings, the longest system of refined petroleum product pipelines in the U.S. Formerly, he was a member of the Board of Directors at Spinnaker Exploration and Treasurer of the Mobil Corporation. Arnheim is currently a renewable energy expert with the USAID Serbia Competitiveness Project. He is currently in Serbia to assess recently adopted legislation on renewable energy and how this improved regulatory environment can generate opportunities for foreign and local investment in renewable energy projects.

**■ Based on your experience in Serbia, could you comment on Serbia's biomass potential and possibility to attract foreign and domestic investment?**

Serbia has a large untapped potential for renewable energy in Europe. Biomass is an important part of that potential. Serbia produces a considerable amount of sawdust and waste wood in saw mills and furniture plants that could be converted into high-energy pellets. There is a strong market for these pellets in Western Europe and the beginnings of one here in Serbia. We are already seeing companies, domestic and international, investing in the capture of wood waste in Serbia and its conversion into pellets. As the consumer driven market for pellets develops in Serbia, I believe that more investment will flow into this sector. Serbian boiler makers are also looking into

supplying this market, which has traditionally been dominated by international manufacturers.

During the harvesting process, Serbia also produces a lot of agricultural waste, which could be used to supplant fossil fuels. Because the supply is seasonal and the cost of transportation is relatively high, agricultural waste will probably be used as a supplemental source of energy by plants close to the supply source. A number of large farms in the agricultural heartland of Serbia have already implemented such a strategy. Because of the limited scale of resources and the size of government subsidies required to make a plant economical, I do not foresee investors rushing to build ethanol plants in Serbia fueled by agricultural products or byproducts.



Postrojenje za proizvodnju drvnog peleta

**■ How will the recently adopted renewable energy policy (feed in tariffs, power purchase agreement, etc.) impact development of the renewable energy sector in Serbia?**

Having followed the slow development of renewable energy in Serbia for a number of years, I was thrilled to see the passage of the recently enacted policies. By themselves, they will not guarantee a surge in investment in renewable energy in Serbia. But it is clear that without these policies, the pace of development would continue to be weak and lag behind most other European

### Promotional and technical support

The USAID Competitiveness Project is promoting investment in energy efficiency and renewable energy technologies by providing support to manufacturing companies to conduct energy audits and by providing technical assistance to access finance for investment in energy efficiency improvements.

countries. I give much credit to the drafters of the renewable energy policies, policies that I expect will lead to greater energy security, improved balance of payments, more employment and a cleaner environment for Serbia.

**■ What do you see as major obstacles for investment in the Serbian renewable energy sector?**

The drafters of the renewable energy policies have made it possible for a renewable energy industry to thrive in Serbia. However, we all know that the actual project approval process, from citing the facility to licensing it to come on stream and all the steps in between, will determine the pace of industry development and the size of investment capital it will attract. Countries in Eastern Europe and the Balkans do not have a long history of a project approval process that is expeditious and transparent. Serbia can differentiate itself from others in the region by creating a more streamlined licensing and permitting process.

**■ How is the renewable energy sector globally affected by the economic crisis and what are the implications for Serbia?**

The global economic crisis has not helped the renewable energy sector. First, energy costs are down, which makes it more difficult for renewable energy to compete against traditional fossil fuels. But perhaps more importantly, bank lending and funds for new project investments have largely dried up. Projects with committed financing have gone forward but others that were not well capitalized have slowed down, put into abeyance or canceled outright.

There is a feeling now that the worst of the economic downturn may be behind us. Capital markets are starting to open up and surprisingly there is good investor appetite for emerging markets, such as Serbia. I believe that with the right government policies, including both the legislation and approval process, and with the right project economics, Serbia should be able to attract its share of growth capital for renewable energy even in the current economic environment. If these conditions are satisfied, investors will flock and funds will flow.

The USAID Competitiveness Project is promoting investment in energy efficiency and renewable energy technologies by providing support to manufacturing companies to conduct energy audits and by providing technical assistance to access finance for investment in energy efficiency improvements.

*Srbija nije dovoljno bogata da štedi svoje obnovljive i čiste oblike energije*

# "Zelena industrija" nema limita

U mnogim oblastima privređivanja u Srbiji, pa i u energetici, najveći potencijali su u štednji i u većem korišćenju domaćih sirovina, koje mogu zameniti skupe uvozne proizvode. U tom smislu, kada se zna da uvozimo godišnje više od 3,2 miliona tona nafte, 2,2 milijarde kubika gasa, značajnu količinu visoko kaloričnog uglja, a da nam često nedostaje i električna energija, potpuno nestvarno zvuči podatak da imamo potencijale obnovljivih izvora energije (OIE) koji bi mogli da zamene 3,6 miliona tona nafte godišnje, od čega čak 2,6 miliona tona tog skupog i uvoznog energenta možemo da zamenimo raznim oblicima biomase, koja inače propada u šumama i na njivama.

Zanimljivo je da je još pre četvrt veka Srbija, u okviru bivše SFRJ, bila na putu da vrlo brzo postane predvodnik u korišćenju OIE, ali i opreme i tehnologija koje su tek počele da se koriste u svetu u toj sferi. Međutim, činjenica da su naša preduzeća i naučni instituti tada proiz-

vodili veoma kvalitetne generatore za tek započetu industriju vetroelektrana ili solarne kolektore za direktnu konverziju u električnu energiju, nije mnogo značila. Tada, a i mnogo kasije, nije bilo podsticajnih mera za širu primenu novih i obnovljivih izvora energija, a politika forsiranja niske cene električne energije upravo obrnuto je delovala na mogućnost povećanja njihovog učešća u energetsom bilansu zemlje.

Zbog toga je sada i moguće da nam primeri mnogo razvijenijih zemalja budu okosnica za podsticaj nečemu što je ionako bilo logično decenijama. U tom smislu, može se reći da nismo dovoljno bogati da štedimo svoje čiste i jeftine resurse. Danas je još važnije da se korišćenjem ovih izvora mnogo manje zagađuje životna sredina, a u atmosferu se ispušta neuporedivo manje ugljen dioksida, glavnog uzročnika globalnog otopljanja.

Šansu koju nam pružaju podsticajne mere nadležnih institucija i inostranih razvojnih fondova trebalo bi zato maksimalno iskoristiti, ako ne

i ponovo početi put ka osvajanju, ako ne vrha, onda sredine lestvice onih koji koriste takve oblike energije. Najbitnije je ipak da je takva "zelena industrija" veoma profitabilna i da gotovo ne postoje granice za plasman opreme, tehnologija i proizvoda tog tipa.

Specijalni dodatak USAID-a i Danasa o samo jednom segmentu korišćenja OIE, odnosno drvene i nekih drugih vidova biomase, upravo dokazuje da se iza tih "skrivenih bogatstava" kriju nebrojene mogućnosti za štednju, izvoz, sveukupni razvoj i zapošljavanje. Neophodno je samo zadržati trend podsticaja svima koji se odluče na slične korake i još više olakšati procedure za njihovu primenu i investicije. Sve ostalo će biti lako, jer nam ne nedostaje domaće pameti i preduzetničke umešnosti.

*No country, including Serbia, can afford to overlook the use of clean and inexpensive renewable resources, which reduce greenhouse gas emissions and protect the environment.*

## The potential of the green industry has no limits

The key to strengthening Serbia's energy sector is rooted in savings and better use of domestic raw materials, which can easily substitute expensive, imported goods. Renewable energy in Serbia has the potential to substitute 3.6 million tons of oil per year. This includes 2.6 million tons of oil that can be substituted by various types of biomass, which otherwise decays in forests and arable land. It is surprising then that Serbia imports more than 3.2 million tons of oil, 2.2 billion cubic meters of gas, and vast amounts of coal on a yearly basis.

Just 25 years ago, Serbia (as a Republic of the former SFRY) was well on its way to becoming a leader in the use of renewable energy. The equipment and technology in the sector were just emerging onto the world

scene. Serbia's prominent enterprises and research science institutes produced high quality generators for the nascent wind power industry and collectors that converted solar energy into electricity. At the time however, there were no incentives for the broader use of renewable energy sources, and a national policy that promoted low cost electricity had an adverse effect on the potential for renewable energy sources to factor into the total energy balance of the country.

The current use of renewable energy in far more developed countries proves that Serbia was onto something very important. Today, no country can afford to overlook the use of clean and inexpensive renewable resources, which reduce greenhouse gas emissions and protect the environment.



U Srbiji se proizvode generatori za vetroelektrane

Serbia must take full advantage of incentives and foreign development funds to promote the use of renewable energy sources. As we develop this green industry, we must ensure it is profitable and that there are no limitations on the sale of equipment, technology and products.

The Daily Danas has partnered with the USAID Serbia Competitiveness Project to compile this special supplement on biomass, one key component of renewable energy. The supplement touches on an array of benefits for the use of biomass, including cost savings, export markets, and the economic development potential associated with this renewable energy source. Moving forward, Serbia must build on its efforts to offer incentives, implement policy and facilitate investment for biomass. Everything else is simple. We have the expertise and enterprise skills to be successful.

*Metalna industrija Alfa Plam iz Vranja je balkanski lider u proizvodnji ogrevnih tela na novo ekološko gorivo*

## „Pametne“ peći za izvoz

**S**agledavajući sve strože zahteve zaštite životne sredine u Srbiji, ali i na prostoru Balkana, ugledna vranjska kompanija Alfa Plam počela je 2008. godine serijsku proizvodnju elektronski programiranih peći koje koriste pelet. Reč je o gorivu izrađenom od drvene mase i bez hemijskih dodataka, koje nije štetno po zdravlje čoveka i okolinu.

Slavoljub Milić, rukovodilac prodaje kompanije Alfa Plam, objašnjava da je od početka proizvodnje peći "Alfa pelet" na domaćem tržištu prodato oko stotinu takvih ogrevnih tela, dok je čak 6.000 plasirano na tržište Italije.

- Ova peć koristi, kao što i njeno ime kaže, pelet od drvene mase, pri čijem sagorevanju ostaje minimalna količina pepela, tako da se čišćenje može obavljati jednom nedeljno. Pelet je veoma visoke kalorične moći, i daje do 5,4 kilovata po kilogramu. Jednostavno i lako se koristi, a pakuje se i prodaje u plastičnim džakovima od 15 kilograma, što je dovoljno za grejanje tokom 35 sati, objašnjava rukovodilac prodaje kompanije Alfa Plam.

On navodi i da je sve veće interesovanje kupaca iz Srbije i susednih zemalja za "Alfa pelet". Zbog toga je vranjska kompanija prošle godine organizovala četiri regionalne promocije, ukazujući na prednosti ovog proizvoda koji je ekološki, a uz to i potpuno elektronski automatizovan.

- Elektronsko programiranje omogućava da se temperatura u prostoriji površine od oko 60 kvadratnih metara, koliko inače peć može da zagreje, programira unapred sedam dana. U rezervoar peći staje čak 23 kilograma peleta. Peć se, doduše, priključuje na izvor električne energije zbog napajanja elektronike, ali je potrošnja u rangu jedne sijalice od 100 vati, tvrdi Slavoljub Milić.

Veoma je važno i to što "Alfa Plam" obezbeđuje pelet za sve potrošače koji su kupili ovu peć, a u Srbiji već postoji pet proizvođača ovog energenta. Za grejnu sezonu potrebno je dve do dve i po tone peleta, a jedna tona u maloprodaji košta od 140 do 180 evra. U poređenju sa pećima koje koriste drva, za grejnu sezonu, u zavisnosti od tipa peći i toplotne izolacije prostora, neophodno je sedam do 15 kubnih metara, za koje treba platiti oko 600 evra.

Alfa Plam kao srpski lider u ovoj oblasti metalske industrije, za ovaj novi proizvod iz uvoza nabavlja samo elektroniku, dok su stručnjaci iz Vranja osvojili izradu svih elemenata peći, koja se od prvog šrafa do montaže elektronskog programera, radi u matičnoj fabrici. Kontrola kvaliteta svih proizvedenih peći iz bogatog asortimana ove kompanije, uključujući i "Alfa pelet", sprovodi se u sopstvenoj laboratoriji. Na domaćem tržištu "Alfa pelet" košta oko 850 evra, uz najavu da će cena, kako raste tražnja, biti manja i pristupačnija svim zainteresovanim kupcima.

### Među pet najvećih u Evropi

Okosnicu proizvodnog programa Alfa Plama predstavljaju štednjaci na čvrsto gorivo, a samo u 2007. godini proizvedeno je čak 120.000 štednjaka čija proizvodnja je u Vranju započeta davne 1968. godine. Proizvodnja i danas veoma traženih štednjaka "Alfa 70" i "Alfa 90 H" započela je još 1989. godine. U ovoj oblasti, po obimu proizvodnje, plasmanu i prepoznatljivom kvalitetu, Alfa Plam je vodeći proizvođač u Srbiji i u jugoistočnoj Evropi, a svrstava se i među pet najvećih u svojoj grani u Evropi.

*Metal industry Alfa Plam from Vranje is the Balkans leading manufacturer of the heating devices burning new ecological fuel*

## „Smart“ Stoves for Export As Well

**H**aving realized increasingly greater demands for the environmental protection in Serbia and the Balkans, the distinguished company Alfa Plam from Vranje began in 2008. series production of the electrically programmed pellets stoves. Pellets are a type of fuel made of the wooden mass without chemical additives that is not harmful to your health and environment.

Slavoljub Milić, Sales Manager in the company Alfa Plam, explains that since the beginning of the "Alfa pellet" stoves production about one hundred such heating devices have been sold in the domestic market and even 6.000 of them have been put on the Italian market.

- This stove uses wood pellet as its fuel and After it has been burnt there is a minimal amount of the ash, so the cleaning of the stove should be done once a week. Pellet has very high calorie value and a kilo of it can generate as much as 5.4 kWh. The use of pellets is very simple and it is packed and sold in the 15 kilo plastic bags, which is enough for 35 hour heating, explains the Sales Manager of the company Alfa Plam.

He also says that the interest of buyers from Serbia and neighbouring countries in the "Alfa pellet" has increased. Therefore the company from Vranje organized four regional promotions last year, pointing out the benefits of this product which is ecological and completely electrically automated one.

- Due to the electrical programming the temperature in the room of 60 square meters, which is the area that can be heated with one stove, can be set seven days in advance. The capacity of the stove container is 23 kilos of pellets. The stove is actually connected to the source of electrical energy in order that the electronics can be supplied with it, but it spends the same amount of the electrical energy as a 100 watt light bulb, says Slavoljub Milić.

### Among Five Largest Manufacturers in Europe

The essence of the Alfa Plam's production programme is solid fuel cooker and in 2007. as many as 120.000 cookers were produced. The production of these cookers began in Vranje long time ago, in 1968. The production of the cookers "Alfa 70" and "Alfa 90 H", which are today also demanded, began in 1989. According to the production capacity, sale and distinguished quality of the products Alfa Plam is a leading manufacturer in this industry in Serbia and southeast Europe and it is also among five largest ones in Europe.

It is very important that the Alfa Palm supplies the customers who have bought the stove with the pellets, and there are already five manufacturers of this fuel in Serbia. It is needed between two and 2.5 tonnes of the pellets within one heating season and the retail price of one tonne of this fuel is between €140 and €180. In comparison with the wood stoves it is significantly cheaper because during the heating season depending on the type of stove or the thermal insulation of the room you need between seven and 15 cubic metres of firewood which cost more than €600.

As the Serbian leader in this domain of the metal industry the Alfa Plam imports only electronics and the experts from Vranje have mastered the production of all stove elements, so the whole process of making the stove, from the first screw to the installation of the electronic programmer, is performed in the main factory. The quality control of all produced stoves from the rich assortment of this company, including "Alfa pellet", is done in its own laboratory. "Alfa pellet" costs around €850 in domestic market, but it is announced that the price will decrease and be more approachable for the potential buyers with the increase in demand for the product.



Slavoljub Milić, rukovodilac prodaje u Kompaniji Alfa Plam



Radmilo Savić, izvršni direktor Beogradskih elektrana

*Čvrsta biomasa već dve godine se koristi kao zamena za uglj u devet toplotnih izvora u sastavu JKP Beogradske elektrane*

## Efikasnije i zdravije grejanje

**J**avno komunalno preduzeće Beogradske elektrane, u skladu sa savremenim svetskim trendovima, a suočena sa rastom cene fosilnih goriva, već više godina posebnu pažnju posvećuje povećanju energetske efikasnosti i ekologiji. Iz tog razloga istraživane su mogućnosti za primenu obnovljivih izvora energije za grejanje, među kojima je i biomasa.

Radmilo Savić, izvršni direktor Beogradskih elektrana, objašnjava da su se pre dve godine na tržištu pojavili energetska pelet i briketi od drvne biomase domaće proizvodnje. Istovremeno, tokom grejne sezone 2007/08. sprovedeno je ispitivanje koje je dalo odgovor da li je i pod kojim uslovima moguća direktna zamena uglja čvrstom biomasom, nakon čega je doneta odluka da se to i sprovede.

- Čvrsta biomasa, kao zamena za uglj, već dve godine se koristi u devet toplotnih izvora u sastavu JKP Beogradske elektrane. Sedam kotlarnica, uglavnom na području Karaburme, koristi briket, dok kotlarnica Senjak i toplana Barajevo kao gorivo koriste pelet. U njima se po sezoni sagori oko 2.000 tona peleti i oko 2.300 tona briketa. Tako samo još kotlarnica u Sremčici koristi uglj kao gorivo, ističe Savić.

Prema njegovim recima, poređenjem energetskih, ekoloških i ekonomskih pokazatelja, sve prednosti su na strani čvrste biomase. U

*Solid biomass as a substitute for the coal has been used for as much as two years in nine heat sources within public utility company Beogradske elektrane (District Heating Plants)*

## More Efficient And Healthier Heating

**F**aced with the increase in fossil fuel prices public utility company Beogradske elektrane has for a number of years paid special attention to improving energy efficiency and environmental protection in accordance with the contemporary world trends.

For that reason it has been explored a range of possibilities for the utilization of the renewable energy sources, including biomass, for heating purpose.

Radmilo Savić, Executive Manager of Beogradske elektrane, explains that domestically produced wooden biomass energy-generating pellets and briquettes were put on the market two years ago. During 2007-2008 heating season the research was conducted and it gave the answer to the following question: would it be possible and under what conditions to directly replace coal with solid biomass? After the research had been undertaken it was decided that the replacement should be done.







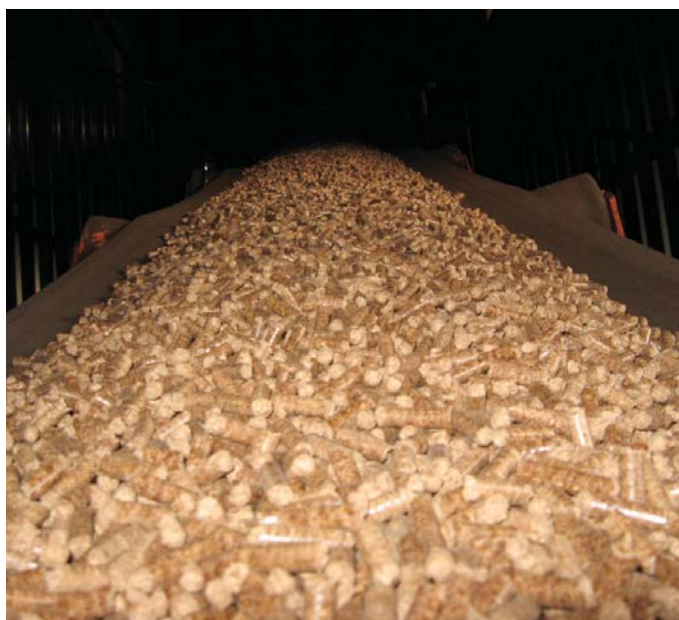
Beogradske elektrane već ulažu u obnovljive izvore energije: Geotermalno postrojenje na Konjarniku

odnosu na uobičajena fosilna goriva, postiže se kvalitetnije sagorevanje, čime se povećava i stepen iskoristivosti primarnog goriva. Značajno je i smanjenje emisije zagađujućih materija, a stvara se i mnogo manje pepela. Smanjena je emisija ugljen-dioksida koja se meri hiljadama tona po grejnoj sezoni, a količina ugljen-monoksida je niža dva do tri puta. Drastično je manja i emisija praškastih materija i čađi, što je veoma značajno za život stanovništva u blizini kotlarnica.

- Beogradske elektrane su postigle maksimum u korišćenju čvrste biomase kao osnovno gorivo u postojećem sistemu, bez ikakvih investicija. Želja nam je da se biomasa koristi i na drugim mestima, ali to prvenstveno zavisi od raspoloživih sredstava, jer je u tom slučaju neophodno obaviti neophodne rekonstrukcije. Sa druge strane, ukoliko se ukaže potreba za izgradnjom novih toplotnih izvora, razmatračemo mogućnost izgradnje "ekoloških toplotnih izvora", ističe Radmilo Savić, izvršni direktor Beogradske elektrane.

### Zameniti 100.000 tona uglja biomasom

Za kratko vreme, sadašnja potrošnja svih toplana u Srbiji koja iznosi više od 100.000 tona uglja za potrebe proizvodnje toplotne energije, mogla bi biti zamenjena čvrstom biomasom, što bi smanjilo zavisnost od fosilnih goriva, prvenstveno uglja, i doprinelo održivom energetskom razvoju, koji se nameće kao neminovnost.



- Solid biomass as a substitute for coal has been used for as much as two years in nine heat sources within public utility company Beogradske elektrane. Seven boiler facilities, mostly located in Karaburma, use briquettes and the Senjak boiler facility and Barajevo district heating plant use pellets as fuel. During one heating season these facilities spend about 2.000 tonnes of pellets and 2.300 tonnes of briquettes. Therefore the boiler facility in Sremčica is the only one that uses coal as fuel, Savić said.

According to his words by comparing the energy, environmental and economic indicators it can be concluded that all advantages are on the side of solid biomass. In comparison with the common fossil fuels better combustion is achieved which increases the primary fuel utilization level. The reduction of polluting substances emissions is of great importance and there is also significantly smaller amount of ash. The CO2 emission which is measured in thousands of tonnes per



heating season is reduced and the CO quantity is two to three times lower. Powder matters and soot emission are also significantly reduced, which is very important for the citizens who live in the vicinity of the boiler facilities.

- Public utility company Beogradske elektrane has reached maximum potential regarding the utilization of solid biomass as a primary fuel within existing system without investment. We hope that the biomass will be used in other places as well but it primarily depends on the availability of the financial resources because the necessary reconstructions of the facilities must be done. On the other hand, should the need for the construction of new heat sources arise, we will consider whether it is possible to construct "eco-friendly heat sources", says Radmilo Savić, Executive Manager of Beogradske Elektrane.

### To Replace 100.000 Tonnes of Coal with Biomass

Within short period of time current consumption of more than 100.000 tonnes of coal for the need of heat energy production in all district heat plants in Serbia could be replaced with solid biomass, which would reduce dependence on fossil fuels, primarily on coal, and contribute to the sustainable energy development, that is inevitable.

*Preduzeće Bio-therm celokupnu proizvodnju peleta plasiralo u izvoz*

# Britanci nude otkup trogodišnje produkcije

**F**abrika Bio-therm u Vučkovicima, kod Guče, jedna od retkih u Srbiji koja proizvodi novi energent od biomase, prošle godine proizvela je oko 4.000 tona peleta i sve to izvezla na evropsko tržište.

Preduzeće je osnovano pre tri godina, kada je imalo samo nekoliko radnika i proizvodilo oko 500 kilograma drvnih peleta na čas. Danas ima dvadeset troje zaposlenih, a zahvaljujući savremenim presama iz Švedske i Nemačke, raspolaže projektovanim kapacitetom za proizvodnju četiri tone tog ekološkog i obnovljivog energenta na čas. Ta ulaganja, kako kaže Mirko Minjović, poslovođa Bio-therma, omogućile su fabrici, čiji kapital je u potpunosti inostrani, da tri puta uveća godišnju proizvodnju.

- Za proizvodnju peleta koristimo nusproizvode drvne industrije sa područja od Nove Varoši i Pijepolja, do Čačka i Užica, a zbog povećanja

## Višestruka isplativost

- Cena peleta po toni odgovara ceni četiri do pet kubnih metara ogrevnog drveta, u zavisnosti od kvaliteta oba energenta. Računica ukazuje da je ovaj energent višestruko isplativ, jer dva kilograma peleta odgovaraju energetske vrednosti litru lož ulja, odnosno tona peleta može da zameni četiri i po do pet kubika ogrevnog drveta, s tim da drva treba prevesti, iseći, složiti u odgovarajući prostor, što predstavlja dodatne troškove, objašnjava naš sagovornik.



Novo gorivo u Evropi veoma traženo za moderne i visoko efikasne peći

kapaciteta planiramo da se snabdevamo i iz Crne Gore, dodaje Minjović i navodi da je ekonomska i finansijska kriza otežala snabdevanje, jer su mnoge strugare u Srbiji ugašene ili rade sa smanjenim kapacitetima.

- Pelet, kao čist oblik biomase, dobija se isključivo presovanjem i sušenjem piljevine, sa veoma malim procentom vlažnosti i bez ikakvih hemijskih dodataka, objašnjava naš sagovornik i ističe da proizvod tog preduzeća uvek ima kupce.

- Zatpani smo ponudama, jer je naš proizvod veoma tražen na evropskom tržištu. Kolika je tražnja

za našim proizvodom ukazuje i to što je investitor iz Velike Britanije, bio zainteresovan da otkupi našu kompletnu proizvodnju u naredne tri godine, kaže Minjović, dodajući da se, i pored mnogih prednosti u odnosu na ostale energente, pelet u Srbiji još uvek nedovoljno koristi, jer ljudi nisu informisani.

- Pelet je veoma čist energent, ne zagađuje okolinu, dimni gasovi su svedeni na minimum, a pored visoke kalorične vrednosti ostaci pepela su od 0,5 do 1 odsto. To je energent veoma pogodan za automatsko loženje, što znači da odgovara urbanom načinu života, jer ne zahteva velike prostore za skladištenje, dodatno vreme i troškove, kao za pripremu drugih vrsta ogreva. Pakuje se u vrećama od 15 kilograma, a veoma je pogodan i za upotrebu u urbanim sredinama, objašnjava naš sagovornik.

- Pelet je proizvod za 21. i 22. vek, jer je to energent koji je ekološki čist i potpuno obnovljiv i ubeđen sam da će ga svi koristiti, uzimajući u obzir međunarodne protokole o zaštiti životne sredine, zaključuje Minjović i nada se da će država uspeti da subvencijama pomogne proizvodnju tog energenta, kao što se zahvaljujući USAID Projektu za razvoj konkurentnosti mnogo pomoglo proizvođačima peleta, specijalizovanih kotlova i peći.

## Lak za upotrebu

Pelet se dobija presovanjem ostataka drveta. Ostaci se najpre sitne i dobija se brašno, a potom se masa presuje i oblikuje u štapiće različitih, uglavnom malih dimenzija, što taj energent čini veoma lakim za korišćenje i u sobnim pećima i u kotlovima za centralno grejanje.



*The enterprise Biotherm in Vučkovića near Guča has exported the entire pellets production*

# The British Offer to Buy Up Three-Year Production Output

**T**he factory Biotherm in Vučkovića near Guča, one of a few in Serbia which makes a new biomass fuel, last year produced about 4.000 tonnes of pellets and exported all of it to the foreign market. The enterprise was established three years ago and at that time it had only a few employees and produced around 500 kilos of pellets per hour. Today it has twenty three employees and thanks to the modern press machines imported from Sweden and Germany it has projected capacity to produce four tonnes of this ecologically clean and renewable fuel per hour. According to Mirko Minjović, Chief of the Biotherm, these investments will enable the factory which owns solely foreign capital to triple its annual output.

- We use by-products of the wood industry from the territory stretching from Nova Varoš and Prijepolje to Čačak and Užice, and for the sake of increasing the capacity we plan to provide material from Montenegro as well, adds Minjović. He says that the economic crisis has impeded the supply because many lumber mills in Serbia are closed or they work with the reduced capacities.

## Multiple Profitability

- Pellets price per tonne is equivalent to the price of four or five cubic metres of firewood, depending on the quality of both fuels. The calculation shows that thanks to this fuel the profit can multiply many times because two kilos of pellets are equivalent to the energy value of one litre of fuel oil, which means that one tonne of pellets can replace between 4.5 and 5 cubic metres of firewood. But one should bear in mind the fact that the firewood should be transported, cut and packed in the suitable room, which requires extra costs, explains our interlocutor.

- Pelletes as the pure forms of biomass are made only by pressing and drying saw dust with very small percentage of moisture and without any chemical additives, explains our interlocutor and stresses that there are always buyers for the products of this enterprise.

- We are overwhelmed with the orders because the demand for our products is very high on the European market. The fact that an investor from Great Britain is interested in buying up all products which we will have produced within the next three years shows

## Simple Use

Pellets are made by pressing the wood wastes. Wood wastes are reduced to the powder first and then the mass is pressed and shaped into sticks of various dimensions, mostly small ones, due to which the use of this fuel in the stoves or boilers for central heating is simple.

how great demand for our product is, says Minjović. He adds that in spite of many benefits of using pellets in comparison with other fuels, it is insufficiently used in Serbia because people are not informed about it.

- Pellet is a very pure fuel, it doesn't pollute environment, the emissions of gases are reduced to the minimum and in spite of its high calorie level the amount of ash remains is between 0.5 % and 1%. It is the fuel very suitable for the automatic stoking which means that it is appropriate to the urban way of life because it doesn't request big storage space, extra time and costs as is the case for the preparation of other fuel types. It is packed in 15 kg bags and it is very suitable for the use in the urban areas, explains our interlocutor.

- Pellet is a product of 21. and 22. century because it is an ecologically clean and completely renewable fuel and given the



international protocols on environmental protection I am convinced that everybody will use it, concludes Minjović. He hopes that the country will manage to help the production of this fuel by subsidies in the same way in which the pellets, special boilers and stoves manufacturers received huge help thanks to the USAID bioamass use program.



*Kompanija Bioenergy Point u Boljevcu proizvodi pelet 24 časa dnevno, sedam dana u nedelji i ne može da odgovori na sve zahteve*

# Potražnja samo iz Italije veća od kapaciteta

**K**ompanija Bioenergy Point osnovana je avgusta 2007. u okviru East Point grupe. Osnovno polje delatnosti su obnovljivi izvori energije. Dragan Stojanović, direktor kompanije, u razgovoru za Danas objašnjava da je prvi projekat, odnosno gradnja fabrike peleti u Boljevcu kod Zajčara započeta početkom 2008, a već novembra iste godine ovaj pogon je počeo da radi.

Naš sagovornik ističe da se korišćenjem peleti, u odnosu na druge vrste goriva, stiče višestruka prednost.

- Najvažnije jeste to da je u pitanju čista i obnovljiva energija. Čista, jer u procesu sagorevanja oslobađa najmanje štetnih materija, a ostatak pepela nakon sagorevanja kreće se samo od 0,5 do 1,5 odsto. Prilikom loženja u za to namenjenim uređajima, u specijalnim pećima i kotlovima,

drugih proizvoda od drveta. Pored svega, tu je i drvni ostatak u šumama, kaže Stojanović.

On dodaje da postoje podaci i planovi o količini drvene mase za svaku godinu i da ta količina ne sme da pređe godišnji prirast.

- Seče se samo onoliko drvene mase koliko u jednoj godini može da se obnovi. Pored toga, značajna prednost je i u postupku proizvodnje. Pelet je strogo kontrolisan proizvod po više parametara, kao što su vlažnost, procenat pepela, sadržaj sumpora, energetska moć, količina isparljivih materija. Važno je objasniti da postoji sličan proizvod od drvnih ostataka, poznat pod nazivom briket, međutim kod njega nije sve ovo kontrolisano, napominje Stojanović

Po obliku, pelet je veličine filtera za cigarete, najčešće šest milimetara prečnika i do 25 milimetara dužine. Na taj način se postiže da ovako dimenzionirano gorivo bude smešteno u rezervoare, te nije potrebno ručno "ložiti" i po nekoliko dana. Takva postrojenja mogu da imaju i elektroniku koja reguliše više procesa, počev od toga da se kotao "sam pali" u programirano vreme, pa do toga da održava zadatu temperaturu u određenom periodu, objašnjava direktor kompanije Bioenergy Point i dodaje da je pelet strogo kontrolisanog sastava i da nema nikakvih primese lepka, laka ili drugih štetnih aditiva, te je ekološki potpuno ispravan proizvod.

On ističe da je Bioenergy Point, nakon nešto više od godinu dana rada, uspeo da proda sve što proizvede.

- Fabrika radi 24 časa, sedam dana u nedelji. Najznačajnije tržište gde plasiramo naš proizvod jeste Italija. Mi čak i ne možemo da odgovorimo na sve zahteve iz ove zemlje, pa zbog toga nameravamo da proširimo kapacitete. Pored toga izvozimo za Grčku, Albaniju, Makedoniju. Međutim, ono što je za nas vrlo značajno jeste rast domaće potražnje. Osim Beogradskih elektrana koje će ove sezone utrošiti oko 2.200 tona, na domaćem tržištu je dosad plasirano oko 1.000 tona peleti. Očekujemo da će sledeće grejne sezone to biti bar nekoliko puta više, ukazuje Stojanović.

Prema njegovim rečima, prodaja bi bila i veća da nije ekonomske krize.



Dragan Stojanović, direktor kompanije Bioenergy Point

## Nelogična stopa poreza

- Kada je reč o projektu USAID-a, valja naglasiti da ovaj razvojni fond pre svega učestvuje u popularisanju korišćenja obnovljivih izvora energije. Naša saradnja je izuzetna. Ovaj fond SAD doprineo je, takođe, međusobnom upoznavanju i saradnji svih relevantnih subjekata koji se bave biomasom na našem tržištu, pre svega proizvođača kotlova i peleti. Što se tiče mogućih daljih podsticaja, mislim da naša država ne mora da daje nikakve subvencije u vidu novčanih sredstava, ali bi mogla proizvođače peleti da oslobodi poreza, ili bar da ga smanji za 10 odsto. Naime, porez na ogrevno drvo je osam procenata, a porez na pelet je 18 odsto, što je potpuno nelogično. Pelet je isto drvo, odnosno proizvod u koji je uloženi i dodatni rad.

- Do sredine godine nameravamo da pustimo u rad još jedan pogon. U planu je i izgradnja još nekoliko fabrika peleti na našem tržištu, nakon izlaska iz krize. Takođe, radimo i na projektu proizvodnje električne energije iz biomase, zaključuje Stojanović.



## Supstitucija uvoza mazuta

- Ušteda energije korišćenjem peleti veća je za 20 odsto u odnosu na upotrebu drugih vrsta goriva. Treba imati u vidu da korišćenjem peleti možemo značajno da uštedimo na uvozu, na primer, postupnom eliminacijom mazuta i supstitucijom uvoza tog goriva domaćom proizvodnjom peleti. Uostalom, mazut treba da bude izbačen iz upotrebe, jer je zabranjen po evropskoj regulativi, napominje Dragan Stojanović.

postiče se maksimalna energetska iskoristivost, koja može da bude i do 93 odsto. Kada se kaže "obnovljiva energija", najčešći komentar laika je da će se zbog njenog korišćenja seći šume. Naravno da to nije tačno. Za proizvodnju peleti koriste se drvni ostaci ili nusprodukti iz različitih proizvodnih ciklusa drvene industrije. Na primer, iz pilana, u proizvodnji rezane građe, vrata i prozora, u proizvodnji telegrafskih i telefonskih stubova i

*Company Bioenergy Point in Boljevac produces pellets 24 hours a day, seven days a week and it cannot satisfy all demands*

# Demand from Italy Only Exceeds Supply

**T**he company Bioenergy Point was established in August 2007. within East Point Group. Its main domain is renewable energy sources. Dragan Stojanović, General Manager of the company, explains for daily Danas that the first project - construction of the pellet factory in Boljevac near Zaječar - began in the first months of 2008. and as soon as in November the same year the production was started.

Our interlocutor stresses that in comparison with other sorts of fuels, use of pellets has many advantages.

- The most important thing is that we get pure renewable energy. It is pure because there is a minimal amount of harmful matters in the combustion process, and the amount of the ash remains After the combustion is between 0,5 and 1,5 %. During stoking appropriate heating devices - special stoves and boilers - maximal energy utilization level is achieved and it can reach 93 %. The most common comment of the laymen on the term "renewable energy" is that due to the use of it the woods will be destroyed. Ofcourse, this is not true. Pellets are made of wood wastes or by-products from various manufacturing processes of wood industry, for example in saw-mills, in the production process of sawn material, doors and windows, in the production process of telegraph and telephone poles and other wood products. There are also wood wastes in forests, says Stojanović.



He adds that there are data about the wooden mass amount for every year and it must not exceed the annual forest growth.

"We cut as much wooden mass as it can be recovered within a year. Manufacturing procedure is also a significant advantage. Pellets are strictly controlled products with respect to some parametres, such as moisture, a percentage of ash, the proportion of sulphur, energy power, the amount of volatile matters. It is important to explain that there is a similar product made of wood wastes which is called briquette, but it is not controlled with respect to all these parametres, says Stojanović.

Regarding its shape a pellet is the same size as a filter tip with six milimetres diameter and a length of up to 25 milimetres. Owing to that fuel with these dimensions-pellet can be put in containers and there is no need for manual "stoking" for a few days. Such installations can be equipped with electronic which regulates several processes, from switching on the stove/boiler automatically at programmed time to the maintaining temperature set in advance within a particular period of time, explains General Manager of the company Bioenergy Point. He adds that



## The Substitution of the Mazut Import

- The savings of the energy as the result of using pellets is increased by 20% in comparison with the use of other fuel types. One should bear in mind the fact that by using pellets we can significantly save on imports, for example by the gradual elimination of the mazut from use and by the substitution of this fuel import for domestically made pellets. Mazut should go out of use because it is forbidden by the European regulative, says Dragan Stojanović.

the pellet structure is strictly controlled and there are no particles of glue, varnish or some other additives in it, so it is an ecologically clean product.

He emphasizes that After more than a year of work, the Bioenergy Point has managed to find a market for the entire amount of the products it has made.

- The factory works seven days a week. Italy is the most important market for our products. We cannot even satisfy all demands from these country. Therefore we plan to increase our production capacity. We also export our products to Greece, Albania and Macedonia. But the thing that is very important to us is the growth of domestic demand. In addition to the fact that public utility company Beogradske elektrane will have spent approximately 2.200 tonnes of pellets till the end of this heating season, we have for now put about 1.000 tonnes of pellets on domestic market. We expect that next heating season this amount will be at least a few times bigger, says Stojanović.

According to his words had it not been for the economic crisis, the sales would be even better.

We intend to establish one more section of the factory by the middle of the year. Besides, we plan to construct a few more pellets factories on our market as soon as we overcome the crisis. We also work on the project for producing the electric power out of biomass, says Stojanović.

## The Illogical Tax Rate

- When it comes to the USAID project it should be stressed that this development fund is primarily intended for the popularization of the renewable energy sources use. Our cooperation is of an extraordinary quality. This US project has also contributed to the meeting and cooperation between all relevant subjects dealing with biomass on our market, particularly between the manufacturers of boilers and pellets. I think that in relation to the possible further incentives our country does not need to give any subsidies in the form of financial resources, but it could make pellets manufacturers tax-free or the taxes should be at least decreased by 10%. The tax on firewood is 8% and the tax on pellets is 18%, which is totally illogical. Pellets are also pieces of wood, but these products are made through extra work.

*Izgradnju fabrike Forest Enterprises finansirao  
Evropski investicioni fond*

# Dobar biznis i bez domaćeg tržišta

**F**abrika za proizvodnju peleta Forest Enterprises osnovana je početkom 2008. na teritoriji opštine Doljevac. Sedište firme je u Beogradu, a izgradnja fabrike finansirana je iz sredstava Evropskog investicionog fonda, koji je imao namenu da otvori šest takvih fabrika širom Srbije. Zbog svetske ekonomske krize zasad je otvorena samo jedna po tom programu, i to u Doljevcu, na sredokraći između Niša i Ileskovca

- Firma je osnovana početkom 2008. godine, na poljoprivrednom zemljištu koje je kupljeno od opštine. Inače, u opštini Doljevac je na tom prostoru planirana izgradnja industrijske zone, tako da su nam nadležni maksimalno izašli u susret, kaže u razgovoru za Danas Marija Vojinović, menadžerka kompanije Forest Enterprises. Ona dodaje da fabrika zapošljava 30 radnika, mahom sa teritorije ove komune.

- Ljudi koji rade kod nas puni su entuzijazma, jer ono čime se bavimo je nešto potpuno novo kod nas. Tržište za proizvodnju, prodaju i korišćenje peleta tek treba da se razvije. Jug Srbije je posebno pogodan, jer je ovde visoka stopa nezaposlenosti, a kraj je bogat šumom. Takođe, ima dosta pilana i drvoprerađivača, čiji otpad ko-



ristimo kao sirovinu za proizvodnju. Inače, Srbija ima velikih potencijala za korišćenje alternativnih izvora energije. Kada je reč o ovom vidu biomase, sav otpad, pre svega iz šuma i industri-



Marija Vojinović, menadžer firme Forest Enterprises

je koja se bavi preradom drveta treba skupiti i iskoristiti. Naše sirovine su u stvari otpad, tako da na neki način i čistimo životnu sredinu, kaže Vojinovićeva i objašnjava da je pelet ekološki čisto gorivo koje ne sadrži lepak niti bilo kakve štetne aditive.

Ona ističe i da je korišćenje peleta najbolji vid grejanja, ne samo zato što nema zagađenja, već zato što se drastično smanjuje neophodnost čišćenja kotla i za zbrinjavanje i bacanje pepela. Prema rečima naše sagovornice, dodatna pogodnost je ta što se kotlovi uglavnom pale i gase na dugme i ne moraju da se lože svaka dva sata.

- Sve više toplana je zainteresovano za korišćenje peleta, jer je ušteda u odnosu na korišćenje drugih vrsta goriva velika. Jedan kilogram peleta proizvede 18 megadžula energije, dok mrki ugalj daje manje - 14 do 15 megadžula uz mnogo veće zagađenje i korišćenje radne snage. Cena uglavnom zavisi od kvaliteta uglja, odnosno vrste peleta, ali je približno ista za oba proizvoda. Takođe, postoji opcija da se i postojeći kotlovi nadgrade, te ne moraju da se kupuju novi, ističe Marija Vojinović.

Ona napominje da je saradnja proizvođača kotlova i peleta veoma dobra i to, pre svega, zahvaljujući aktivnosti USAID, koji je formirao neformalnu grupu za razvoj biomase, gde su se upoznali i gde razmenjuju iskustva proizvođači peleta, briketa i kotlova, kao i proizvođači i prodavci sirovina. Sve firme koje u Srbiji proizvode pelet saraduju,

- Ne mislimo da smo u konkurenciji, pogotovo onoj nelojalnoj. Tržište je veliko, pogotovo u okolnim zemljama i ima mesta za sve, kaže menadžerka kompanije Forest Enterprises i dodaje da svi koji su zainteresovani za korišćenje peleta mogu da dođu i obidu fabriku.

## Kapacitet 30.000 tona godišnje

- Kapaciteti naše fabrike su 30.000 tona godišnje. Proizvodni pogon može da proizvede četiri tone peleta na sat, samo što ne radi punim kapacitetom, jer naše tržište još nije toliko razvijeno. Kada budemo usavršili proizvodnju, planiramo da pelet izvozimo na sever Italije, koje je jedno od najboljih tržišta za ovaj proizvod. Ipak, planiramo da u narednom periodu dostignemo maksimum proizvodnje, odnosno četiri tone na sat i da što više proizvoda plasiramo na domaće tržište, zaključuje Marija Vojinović.



*The construction of the factory Forest Enterprises financed by the European Investment Fund*

# The Profitable Business Without the Domestic Market As Well

The pellets factory Forest Enterprises was established at the beginning of 2008, on the territory of the municipality Boljevac. The company headquarters are in Belgrade and the construction of the factory was financed by the European Investment Fund which intended to establish six such factories across Serbia. Due to the economic crisis only one factory has for now been set up within this program and it is located in Doljevac between Niš and Leskovac.

- The company was founded at the beginning of 2008, on the agriculture plot which had been bought off the municipality. The construction of the industrial zone had been previously planned for this site in the municipality Doljevac, so the local government was maximally cooperative, says for Danas Marija Vojinović, Manager of the company Forest Enterprises. She adds that there are 30 employees in the factory, mainly the municipality residents.

- People who work for us are full of enthusiasm because we deal with something completely new in our country. The market for the pellets production, sale and use is due to develop. The south of Serbia is particularly suitable for it because of its high unemployment rate and forest wealth. Also there are many saw-mills and wood refineries whose waste we use as the raw material for the production. Serbia has great potentials for the use of the alternative energy sources. When it comes to this biomass form, the entire waste, primarily from the forests and wood processing industries, should be collected and used. Our raw materials are actually waste, so we also clean the environment in some way, says Vojinović. She explains that the pellet is an ecologically clean fuel which does not contain glue or any harmful additives.

She stresses that burning of the pellets is the best form of heating, because there is no pollution and the necessity of cleaning the boiler and collecting and discarding the ash is significantly reduced. According to our interlocutor the boilers are mainly switched on and switched off by pressing the button, which is the additional advantage and you don't have to stoke the boilers every two hours.

- The increasing number of heating plants is interested in the use of pellets because the savings are huge in the comparison with other

fuel types. One kilo of pellets generate 18 megajoules of energy and the same amount of the brown coal gives less energy – between 14 and 15 megajoules with much higher pollution level and the use of bigger workforce. The price of both products is almost the same but it mostly depends on the coal quality and pellets type. There is also the option of adding some new elements to the existing boilers, so there is no need for buying new ones, stresses Marija Vojinović.

She says that the boilers and pellets manufacturers cooperate well, primarily because of the activity of the USAID which established the biomass development association where the pellets, briquettes and boilers manufacturers and raw materials manufacturers and salesmen have met and where they exchange their experiences. All companies which produce pellets in Serbia cooperate.



- We don't think that we are in competition with each other, particularly in the unfair one. The market is big, particularly in the neighbouring countries and there is enough space for all of us, says Manager of the company Forest Enterprises. She adds all customers interested in using pellets can visit the factory.

## The Capacity of 30.000 Tonnes of Pellets per Annum

- Our factory has a capacity of 30.000 tonnes of pellets per annum. The manufacturing machinery can produce four tonnes of pellets per hour, but it doesn't operate at full capacity because our market has not yet been developed enough. When we improve the production we will export the pellet to the north of Italy which is one of the best markets for this product. Nevertheless, we are planning to reach the full producing capacity within the next period of time, which means that we will produce four tonnes of pellets per hour, and we intend to put as much products as possible on the domestic market, concludes Marija Vojinović.



*Fabrika Kirka-Suri iz Beograda već 20 godina proizvodi kotlove za sagorevanje biomase*

# Moguć posao za 500 ljudi



Slobodan Janjušević, vlasnik i osnivač firme Kirka-Suri

**F**abrika kotlova Kirka-Suri iz Beograda jedina je u Srbiji koja već 20 godina proizvodi kotlove za sagorevanje biomase. Više od 200 njenih kotlova godinama uspešno rade u Srbiji, Crnoj Gori, Bosni, Makedoniji, Rusiji, Rumuniji, Ukrajini, Švajcarskoj i Italiji. Osnivač firme i vlasnik, Slobodan Janjušević, ističe da je ideja za ovaj posao nastala zajedno sa potrebom za jeftinijom energijom, kada je Srbija zapala u krizu zbog sankcija i visokih cena fosilnih energenata. On kaže da biomasa u Srbiji ima potencijal oko 60 odsto svih izvora energije, budući da u nju spada sav poljoprivredni i drveni otpad.

Vlasnik Kirke ističe da Srbija zbog nekorisćenja najmanje tri miliona tona biomase, što je ekvivalentno utrošku milion tona nafte, godišnje gubi od oko 700 miliona evra.

## Uspešna saradnja sa USAID-om

Prema rečima Slobodana Janjuševića, saradnja njegove kompanije i USAID-a traje već dve godine i veoma se uspešno pokazala na polju promocije biomase kao obnovljivog, čistog i jeftinog izvora energije. USAID-ov Projekat za razvoj konkurentnosti puno je pomogao u edukaciji široke populacije kao i samih privrednika o biomasi i njenom pretvaranju u energiju. Iz Kirke napominju da za proizvodnju električne energije iz obnovljivih izvora danas postoje podsticaji od strane države u vidu subvencija, što omogućava razvoj i ove vrste energetike u Srbiji. Istovremeno, time se stvara pozitivna slika o Srbiji kao državi koja razmišlja o održivom razvoju, štednji energije i sprečavanju klimatskih promena.

*The factory Kirka-Suri from Belgrade has been producing boilers for burning biomass for as many as 20 years*

# Possible Job for 500 People

**T**he boiler factory Kirka-Suri from Belgrade is the only one in Serbia which has been producing biomass boilers for as many as twenty years.

More than 200 boilers produced by this factory have been successfully operating for years in Serbia, Montenegro, Bosnia and Herzegovina, Macedonia, Russia, Romania, Ukraine, Switzerland and Italy.

Slobodan Janjušević, founder and owner of the factory, stresses that the idea for this business appeared with the need for cheaper energy, when Serbia was in crisis due to the sanctions and high fossil fuel prices. He says that the biomass in Serbia has the potential of about 60% of all energy sources because it includes the entire agricultural and wood waste.

The Kirka owner stresses that Serbia loses at least 700 million euros per annum because it doesn't use at least three million tonnes of biomass, which is equivalent to one million tonnes of oil consumption.

- At the beginning of 1990s the West didn't so much think about the energy generated from biomass, and at that period of time we managed to save many companies from bankruptcy by our boilers because they generated the energy which was between four and six times cheaper than oil or gas. The use of the various forms of biomass is now a great trend in the world,

but the use of the wood and straw is most common, as is the case in Denmark, while only our boilers generate energy from all waste materials existing in our country, says Janjušević.

According to him, the company with 100 employees and with the same number of partners in Serbia produces boilers which generate heating energy from every wastes type. For example, a factory from Niš burns fruit pits, the boilers in the Soja Protein from Bečej operate using straw and the boiler of the big oil plant Viktorija group in Šid uses sunflower husks and wastes as the fuel. The unique case in the world is the Kirka boiler in the wine company Župa in Aleksandrovac, because it burns as many as four types of biomass wastes – pomace remains, fruit pits, wood waste of crates and apple waste.

The investments of small enterprises in the manufacturing of the biomass boilers, which can be produced even for three months, would be already paid out After six months,





## Prodaja domaće pameti

Ogromno interesovanje za kotlovska postrojenja na biomasu vlada u Indoneziji, Tajlandu, Rusiji, Ukrajini, Rumuniji, Kongu, Gvineji, Liberiji, Kubi i drugim zemljama, tako da su Kirkini proizvodi šansa za veliki izvoz iz Srbije i za otvaranje hiljade radnih mesta. Janjušević kaže da to dokazuje i interesovanje za ponude koje Kirka ovih dana šalje u svet. Velike firme poput nemačkih Simensa i Šnajdera, Politehnike iz Austrije i brojne druge zainteresovane su za saradnju sa Kirkom oko sagorevanja biomase.

- Početkom devedesetih Zapad nije toliko razmišljao o energiji koja se dobija iz biomase, a mi smo već tada uspeali da svojim kotlovima spasemo od propadanja brojne firme, jer se tako dobijala energija četiri do šest puta jeftinija od nafte i gasa. Korisćenje raznih vidova biomase sada je veliki trend u svetu, ali uglavnom sagorevaju drvo i slamu, poput Danske, dok jedino naša paleta kotlova omogućava dobijanje energije iz svih otpadnih materijala koje ima naša zemlja, tvrdi Janjušević.

Prema njegovim rečima, firma sa 100 zaposlenih i sa isto toliko kooperanata u Srbiji, pravi kotlove koji toplotnu energiju stvaraju iz bukvalno svake vrste otpada. Na primer, jedna fabrika iz Niša sagoreva voćne košpice, na slamu rade kotlovi u Soja Proteinu iz Bečeja, dok kotao velike uljare Viktorija grup u Šidu koriste otpatke i ljusku suncokreta. Jedinstven slučaj u svetu je Kirkin kotao u vinariji Župa iz Aleksandrovcu, jer sagoreva čak četiri

## The Sale of "Domestic Brains"

There is huge interest in biomass boilers in Indonesia, Thailand, Russia, Ukraine, Romania, Congo, Guinea, Liberia, Cuba and other countries. Therefore the Kirka products are a golden opportunity for the huge export from Serbia and for the creation of thousands jobs. Janjušević says that it is also proved by the fact that there is a huge interest in the supplies, which Kirka has these days sent to the world. Big companies such as Siemens and Schneider in Germany, Polytechnic in Austria and many others are interested in the cooperation with the Kirka regarding the use of biomass as the fuel.

while big projects are being paid out between three and five years. The world banks are willing to give loans with favourable interest rates for the investments in the biomass



vrste otpada biomase - osušene ostatke komine, koštice, drveni otpad od gajbica i otpad od jabuka.

- Investiranje u proizvodnju kotla na biomasu, koji se može proizvesti i za tri meseca, malim firmama bi se isplatilo već posle šest meseci, dok se veliki projekti isplaćuju između tri i pet godina. Svetske banke su voljne da daju povoljne kredite za ulaganje u poslove sa biomasom, sa grejs periodom dužim od proizvodnje postrojenja, pa otplata kreće tek kad kotao počne da daje samo profit, te se investicija i ne oseti i vraća se iz uštede, navodi Janjušević.

Naš sagovornik ističe da je u saradnji sa opštinama Kraljevo, Nova Varoš, Zaječar i Pirot u planu izgradnja termoelektrana - toplana koje

će raditi na neke tipove biomase. Na taj način dobijaće se jeftinije grejanje i do 30 odsto. Istovremeno, sagorevanjem otpada proizvođače se struja i čuvati životna okolina.

- Interesovanje za naše proizvode je toliko veliko da planiramo proizvodnju povećati i do tri puta. Međutim, nećemo širiti samo Kirku, već ćemo angažovati kooperante i tako zaposliti oko 500 ljudi u Srbiji. Nedavno smo potpisali ugovor sa Rusima o stvaranju rusko-srpske firme Remeks-Kirka, sa sedištem u Moskvi. Nju podržava i Ruska federacija, jer i njima je sagorevanje biomase važno, kako ne bi morali da dovlače skupe gasovode u udaljene delove zemlje, najavljuje Janjušević.



business with the grace period longer than the period of boiler production. Therefore one needn't start repaying the loan before the profit from the boiler has been made. So the investments are not felt and they are repaid from the savings, says Janjušević.

Our interlocutor says that his company plans to construct power plants-heating plants, which will operate using some biomass forms, in the collaboration with the municipalities of Kraljevo, Nova Varoš, Zaječar and Pirot. In that way heating costs will be reduced by as much as 30%. Simultaneously, the electricity will be produced and the environment will be protected by burning the waste.

- The interest in our products is so great that we plan to increase our production capacity by three times. However, not only will we increase the production capacity of the Kirka but also we will engage partners, so we will employ about 500 people in Serbia. We have recently signed the agreement with Russians on the establishment of the Serbian-Russian company Remeks-Kirka with the headquarters in Moscow. It is also supported by the Russian Federation due to the fact that the burning of biomass is also important to Russians, because if they use it, they will not need to construct the expensive gas pipelines in the remote parts of the country, announces Janjušević.

## Successful Cooperation with USAID

According to Slobodan Janjušević, cooperation between his company and USAID lasts two years and it is very successful with respect to the promotion of biomass as a renewable, pure and cheap energy sample. The USAID programme contributed a lot to the education of the nation-wide population and businessmen themselves as well about biomass and its turning into energy. It is pointed out in the Kirka that the state today encourages the production of the electric energy from renewable energy sources by subsidies, which allows the development of this sort of energetics in Serbia. In this way positive image of Serbia is made; it is presented as the country which cares about the sustainable growth, energy savings and climate change prevention.

Radijator - Inženjering iz Kraljeva svake godine povećava proizvodnju za 30 do 40 odsto

# Kvalitet bez kompromisa moto 240 zaposlenih

U potreba čvrstih goriva za ogrev veoma je zastupljena u Srbiji. Uglavnom se koriste šporeti i peći na drva u ruralnim oblastima, a kotlovi u prigradskim i gradskim zonama. Primitan je trend rasta interesovanja i sve veće upotrebe kotlova na čvrsto gorivo ne samo u seoskim, već i u gradskim područjima, posebno u prigradskim naseljima velikih gradova kao što su Beograd, Kragujevac, Novi Sad i Niš.

Tržište kotlova na čvrsto gorivo u Srbiji ima veliku perspektivu rasta. Lider među proizvođačima kotlova na čvrsto gorivo, posebno sa staništa kvaliteta finalnog proizvoda je preduzeće Radijator - Inženjering iz Kraljeva koje u ovoj formi posluje od 2002. godine, a predhodno je to bila zanatska radnja Radijator osnovana još 1991.

Danas se kotlovi u Radijator - Inženjeringu proizvode najsavremenijim tehnologijama, uz korišćenje robotike i automatike. Postojanost kvaliteta proizvoda i poslovanja firme potvrđena je dobijanjem sertifikata sistema kvaliteta ISO 9001:2008, a Agencija za strana ulaganja i promociju izvoza SIEPA, dodelila je preduzeću nagradu za najboljeg izvoznika u 2008. godini u kategoriji malih i srednjih preduzeća. Izvoz u 2008. godine iznosio je preko tri miliona evra,

u protekloj je uvećan za još pet odsto, a glavna tržišta su Austrija, Belgija, Nemačka, BiH, Grčka, Poljska, Italija...

Radojko Janjić, osnivač i vlasnik preduzeća je pobornik beskompromisnog insistiranja na kvalitetu proizvoda, što je kao poslovnu filozofiju prihvatilo i svih 240 zaposlenih, među kojima je i 12 diplomiranih mašinskih inženjera.

električna energija) a tu je, bez sumnje, ekološka i ekonomska prednost ovog energenta. Pelet u odnosu na drvo ima veću kalorijsku vrednost zbog svog oblika i načina proizvodnje, jer se pravi pod velikim pritiskom.

Maksimalni učinak pelet ostvaruje u kotlovima Radijator - Inženjering serije C. Kotlovi serije C izrađeni su od kotlovskog lima kvaliteta

## Greju Drvengrad na Mokroj Gori

Na kotao C33 i sve jače tipove moguće je ugraditi i bojler zapremine 100 litara za grejanje sanitarne vode, a na sve tipove kotlova moguće je nadograditi elektrogrejače od 18 do 36 kw. Kotlovi ove serije nalaze sve veću primenu i sve su traženiji proizvod pa je nedavno jedan takav montiran i uspešno greje Kusturičin Drvengrad na Mečavniku, a isti takav koriste i u samom Radijator - Inženjeringu. Zato, ako razmišljate o grejanju na čvrsta goriva ili ste na njih neminovno upućeni, pre nego donesete odluku o tome čime i kako da se grejete, obavezno posetite sajt Radijator - Inženjeringa iz Kraljeva na adresi [www.radijator.rs](http://www.radijator.rs). Tamo vas sigurno čeka rešenje vaših dilema.

Najbolji pokazatelji kvaliteta proizvoda i usluga jeste činjenica da se svake godine proizvodnja povećava za 30 - 40 odsto, što prati i porast broja zaposlenih. Takve proizvode prepoznalo je tržište, posebno u segmentu kotlova koji koriste ekološki prihvatljive energente, kao što je drveni pelet. Pelet je prvi oblik čvrstog goriva koji omogućava automatsko loženje kotlova, što korišćenje čvrstih goriva čini približno komfornim, kao kada je reč i o drugim energentima (gas,

C1204, debljine 4 i 5 milimetara i proizvode se u rasponu snaga od 25 do 50 kW. Ova konstrukcija ima takozvano gornje sagorevanje, pa najviše stepene iskoristivosti ostvaruje loženjem ugljem, drvenim otpadom i biomasom. Pokazalo se da je stepen iskoristivosti gotovo isti kada se kao ogrev koristi drvo, tako da je ova karakteristika univerzalnosti ogreva, izdvojila C kotao u proizvodnom programu.



*Radijator - Inženjering in Kraljevo increases the production by 30 to 40% every year*

# Uncompromising Quality as the Credo of 240 Employees

**T**he use of solid fuel for heating purpose is very common in Serbia. Firewood stoves are mainly used in rural areas and firewood boilers are used in suburbs and city zones. The trend of growing interest in solid fuel boilers and the increasing use of them is noticeable not only in rural areas, but also in urban ones, particularly in the suburbs of big cities, such as Belgrade, Kragujevac, Novi Sad and Niš.

The prospects for the development of the market for solid fuel boilers in Serbia are very good. The leading manufacturer of solid fuel boilers, particularly with the respect to the quality of the final product, is the enterprise Radijator-Inženjering in Kraljevo which has dealt with this type of business activities since 2002. It was previously a handicraft store Radijator established as early as 1991.



Today Radijator-Inženjering produces boilers by modern technology using robotic and automatic devices. The enterprise's business operations and products of consistently high quality are proved by the fact that it has got ISO 9001:2008 Quality Management System Certificate and it has been awarded the prize for the best exporter within the small and medium-sized enterprises category for 2008. by the Serbia Investment Export Promotion Agency (SIEPA). In 2008. the export earnings amounted to more than three million euros and it was increased by 5% last year. The main markets for the products of this enterprise are Austria, Belgium, Germany,

## Drvengrad in Mokra Gora Is Heated by Them

The water heater for heating bath water with the capacity of one hundred litres could be embed in the boiler C33 and all more powerful boilers and electric heaters of 18 to 36kW could be embedded in all boiler types. The use of the boilers from this production line and the demand for them increase and the boiler of this type has recently been installed in Drvengrad where it operates very well. The same one is used in the Radijator-Inženjering itself. Therefore, if you consider using solid fuels for heating purpose or you cannot avoid them, visit the website of the Radijator-Inženjering from Kraljevo on [www.radijator.rs](http://www.radijator.rs) before you make decision about the way of heating your home.

Bosnia and Herzegovina, Greece, Poland, Italy etc.

Radojko Janjić, founder and owner of the enterprise, is a supporter of the uncompromising insisting on the products quality, business philosophy which has been accepted by all 240 employees, including twelve graduate mechanical engineers.

The best indicators of the products and services quality is the fact that the production is every year increased by 30 to 40 %, which is followed by the growing number of the employees. The products of high quality have been recognized on the market, particularly in the domain of boilers burning ecologically acceptable fuels such as wood pellets. Pellet is the first form of solid fuel which allows automatical boilers stoking, which makes the use of solid fuels as easy as the use of other fuels (gas, electricity), which is no doubt the ecological and economical advantage of this fuel. In comparison with the firewood pellet has higher calorie value due to the way of its production because it is made under high pressure.

In the Radijator-Inženjering the boilers of production line C achieve the maximum efficiency. The boilers of production line C are made of sheet metal of quality C1204 with thickness of four to five millimetres and they generate power of 25 to 50 kW. This construction has so-called upper combustion, so it achieves the highest utilization levels by burning coal, wooden wastes and biomass. As it turned out, the utilization level is much the same as in the case of using firewood for heating purpose, so thanks to this characteristic of universality of the fuel, C boilers are distinguished from the production program.



*Kompanija Termomont iz Šimanovaca, proizvođač sa najširim lepezom proizvoda u svojoj branši u istočnoj Evropi*

## Od štednjaka do toplana

**K**ompanija Termomont iz Šimanovaca renomirani je proizvođač svih vrsta kotlova za centralno grejanje na domaćem tržištu, a njihovi proizvodi osvajaju tržišta i susednih zemalja na Balkanu. Nebojša Atanacković, direktor prodaje Termomonta, govori za Danas o razvojnim planovima ove kompanije.

- Neprekidnim ulaganjem u modernizaciju proizvodnje i proširivanjem kapaciteta, naša kompanija poslednjih godina je uspela da plasira proizvode i na zahtevna tržišta Evropske Unije i Ruske federacije. Naše proizvode možete naći na tržištu od Dablina do Ulan Batora, a imamo distributere i partnerske ugovore u Republici Irskoj, Velikoj Britaniji, Španiji, Italiji, Češkoj, Slovačkoj, Poljskoj, Sloveniji, Rumuniji, Bugarskoj, Grčkoj, Ukrajini, Rusiji, Mongoliji, ističe Nebojša Atanacković.

Na pitanje u čemu je prednost Termomonta i njegovog proizvodnog programa u odnosu na konkurentske, on odgovara da je ona u fleksibilnosti.

- Proizvodimo kotlove na čvrsto gorivo u rasponu snage od 10 do 800 KW. Pravimo, na primer, male kućne kotlove i štednjake, ali smo bili partner UNDP-a prilikom isporuke kotla za gradsku toplanu u Novoj Varoši snage čak 2.600 KW, odnosno 2,6 megavata. Ne poznajemo proizvođača kotlova u istočnoj Evropi sa širom lepezom proizvoda od naše.

Pošto je grejanje odavno postalo skupo, pogotovo prilikom korišćenja nekih vrsta goriva, a ekološki standardi se iz godine u godinu pooštavaju, šimanovački gigant primenjuje tehnologiju i rešenja koja se tome prilagođavaju.

- Već duže smo orijentisani na izvoz i to upravo u zemlje EU, gde su ekološki standardi "conditio sine qua non" u priči o kotlovima na čvrsto gorivo. Zbog toga u svom programu nudimo kotlove za 21. vek, a to su kotao na drveni pelet i pirolitički kotao na drvo. Oba proizvoda poseduju sertifikate o kvalitetu domaćih i evropskih akreditovanih institucija. Ovi kotlovi omogućavaju potpuno sagorevanje biomase sa zanemarljivim koncentracijama štetnih čestica u dimu. Istovremeno, oni pružaju maksimalni komfor prilikom loženja. Kao veoma bitan faktor uštede, uz ove naše kotlove preporučujemo i ugradnju akumulatora toplote, odnosno dodatnog spremnika za toplu vodu i termo-regulacionih grupa koje nudimo po najpovoljnijim cenama, ističe direktor prodaje Termomonta.

Ova firma prodaje sve svoje proizvode preko ovlašćenog distributera uvoznika. U regionu su to trgovačke mreže sa liderskim pozicijama. U Srbiji je glavni distributer kompanija sa najvećim obrtom opreme za centralno grejanje, a isto tako u Sloveniji.

- U nekim zemljama saradujemo i sa velikim sistemima i lancima maloprodaje, bilo da su oni direktni uvoznici ili se snabdevaju preko ovlašćenog uvoznika. Takođe tesno saradujemo i sa proizvođačima srodne opreme

### Prodor na istok i zapad Evrope

Rusija se oporavila od krize i tamo se očekuje izuzetan rast, gde se profitira i zbog bescarinskog prometa. Termomontovi proizvodi su kompatibilni i sa zahtevima tržišta Ukrajine, gde je u toku velika kampanja za smanjenje zavisnosti od ruskog gasa. "Očekujemo veliki zamah u centralnoj Evropi i Španiji i ozbiljniji prodor u Veliku Britaniju. Na tehnološkom planu planiramo dalje usavršavanje kotla na pelet za zapadna tržišta koji podrazumeva automatsko uklanjanje pepela. Planiramo i izradu i sertifikaciju novih modela kombinovanih bojlera i spremnika za solarno-kotlovske sisteme", kaže Nebojša Atanacković, direktor prodaje Termomonta.



Nebojša Atanacković, direktor prodaje Termomonta

*The company Termomont in Šimanovci is a boiler manufacturer with the widest array of products in its industry in the East Europe*

## From Stoves to Heating Plants

**T**he company Termomont from Šimanovci is a prominent manufacturer of all boiler types for central heating systems on the domestic market and its products have also acquired the dominant position in the market in the neighbouring countries on the Balkans. Nebojša Atanacković, Sales Manager of the Termomont, speaks for Danas about the development plans of this company.

- Due to the continuous investments in the production modernization and constant increase in the production capacity, our company has managed to put its products on the demanding markets of the European union and the Russian Federation as well. Our products can also be found in the markets on the territory from Dublin to Ulan Bator and we have distributors and partnership agreements in the Republic of Ireland, Great Britain, Spain, Italy, The Czech Republic, Slovakia, Poland, Slovenia, Romania, Bulgaria, Greece, Ukraine, Russia, Mongolia, stresses Nebojša Atanacković.

Asked what is the advantage of the Termomont and its production programme in relation to the competitive companies, he stresses that it is flexibility.

- We produce solid biomass stoves with the power capacity between 10 and 800 kW. For example, we produce cookers and small boilers for home heating systems, but we also were the partner with the UNDP during the shipment of the boiler with the capacity of 2,600 kW or 2.6 megawatts to the city heating plant in Nova Varoš. We do not know the boilers manufacturer in the East Europe which has wider array of products than we do.

Since the heating became expensive long time ago, especially if you use some particular fuel types, and ecological standards have



kao što su solarni paneli, pa je tako naš ekskluzivni partner u Španiji proizvođač solarnih kolektora, a nastupamo zajedno sa švedskim proizvođačem gorionika na pelet - mi nudimo njihove gorionike sa našim kotlovima, a oni nude naše kotlove sa njihovim gorionicima, napominje Atanacković.

Kada je reč o uticaju krize u šimanovačkoj kompaniji kažu da oni ne zavise od trenutno remetilačkih faktora u određenom regionu. Tako se prošle godine u Rusiji zbog krize nije ništa pomeralo, ali je kriza u zapadnoj Evropi naterala ljude da više razmišljaju o štednji.

- Naši proizvodi upravo omogućavaju značajnu uštedu za one koji prelaze sa skupog gasa ili tečnih goriva na obnovljive izvore grejanja, gde i države daju dodatne subvencije. Ove godine predviđamo pad prodaje zbog produženog dejstva krize u Srbiji, Bosni, i u Makedoniji, ali zato predviđamo veliki rast u istočnoj Evropi, gde su naši mali kućni kotlovi i štednjaci iz programa TEMY prava senzacija na tržištu. Poznato je da je na tržišta poput Poljske i Češke, sa jakom tradicijom u proizvodnji kotlova, jako teško ubaciti još jedan u nizu standardnih kotlova, a mi smo nakon dobre analize uspjeli da tamo plasiramo tražene proizvode, naglašava Atanacković.

### Prvi privatno preduzeće u Sremu

Termomont je u privatnom vlasništvu, a osnovan je davne 1986. godine kao prvo privatno preduzeće u Sremu. U prvim godinama postojanja ova firma, sa svega 10 zaposlenih radnika sticala je reputaciju u oblasti instalacija centralnog grejanja i montaže kotlovskih postrojenja. Početkom devedesetih počela je produkcija električnih kotlova, a zatim i onih na druge vrste goriva (čvrsto, tečno, gas) kao i solarno-sanitarnih bojlera za toplu vodu i ostale prateće opreme u grejnoj tehnici (cisterne, radijatori, dimovodne cevi).



### Penetration to The East and West of Europe

Russia has recovered from the crisis and the considerable growth is expected there. The profit in this country is also made due to the duty-free sales. The Termomont's products are in accordance with the demands of the markets of Ukraine, where the campaign for the reduction of its independence on the Russian gas has been launched. "We expect to achieve huge success in the central Europe and Spain and considerable penetration to Great Britain. In technological terms we plan further improvement of the pellet boilers for the west markets, which means we will focus on the invention of the automatic removal of ash. We also plan the construction and certification of new models of combined boilers and containers for solar boiler systems, says Nebojša Atanacković, Sales Manager of the Termomont.

been becoming increasingly strict year on year, Šimanovac giant applies technology and technical solutions in accordance with it.

"For longer period of time we have been focusing on the export to the EU members where the ecological standards are "conditio sine qua non" when it comes to the solid fuel boilers. Therefore we offer boilers for 21. century - wood pellet boilers and firewood pyrolytic boilers - within our programme. Both products were awarded quality certificates by the accredited domestic and European institutions. These boilers allow the biomass combustion with the negligible concentrations of harmful particles in the smoke. Also the stoking of them is very convenient. As very significant saving factor we also recommend the installation of the heat accumulator or the additional container for hot water and temperature-regulating devices which we offer at very favourable prices, stresses the Sales Manager of the Termomont.

This company sells all its products through the authorized distributors and importers. These are trade networks with leading positions in the region. The main distributor in Serbia is the company which records highest turnover of the equipment for central heating system, and the same case is in Slovenia.

- In some countries we cooperate with the huge retail systems and chains which are direct importers or they take the goods through the authorized importer. We also cooperate closely with the manufacturers of related equipment such as solar panels and our exclusive partner in Spain produces solar collectors. We are also in the partnership with the Swedish pellet burner manufacturer - we offer their burners together with our boilers and they offer our boilers together with their burners, says Atanacković.

When it comes to the crisis impact, those employed in the company in Šimanovac says that they do not depend on the impeding factors in some particular region. Due to the crisis nothing developed in Russia last year, and the crisis in the West Europe forced people to think more about the savings.

- Our products allow significant savings for those who began using renewable energy sources instead of expensive gas or liquid fuels, which state supports by the additional subsidies. We predict the decrease in the sale this year due to the prolonged impact of the crisis in Serbia, Bosnia and Herzegovina and Macedonia, but we predict considerable increase in the sale in the East Europe where our small boilers for home heating central systems and cookers from the TEMY programme caused a sensation in the market. Everybody knows that it is very difficult to put one more standard boiler in the series of standard boilers on the market such as Poland and Sweden, since these countries have strong tradition of boilers production. However, we managed to put demanded products on these markets After good analysis, stresses Atanacković.

### First Private Enterprise in Srem

The Termomont is a privately-owned company established in 1986. as the first private enterprise in Srem. Within the first years of its existence the company was establishing reputation with respect to the central heating systems installation and boiler units building. At the beginning of 1990s the company started the production of the electric boilers and After that the production of boilers burning other fuel types (solid fuels, liquid fuels, gas), solar water heaters for hot water and other related equipment within the heating technique (cisterns, radiators, chimney pipes).

*Kompanija Termoplín d.o.o. specijalizovana za kotlove sa automatskim doziranjem biomase i za termogeneratore za zagrevanje velikih objekata*

## Kriza otvara vrata uređajima koji štede

**K**ompanija Termoplín d.o.o. osnovana je 1991. godine i proizvodi toplovođne kotlove sa sistemom automatskog doziranja biomase i termogeneratore sa istim sistemom za zagrevanje velikih objekata kao što su plastenici, staklenici, balon sale, industrijske hale, farme, kao i sušara za voće i povrće, lekovito bilje, detelinu, duvan. U asortimanu njihovih proizvoda su i plastenici i priključne mašine za poluautomatsko rasadivanje sadnica povrća i lekovitog bilja.

Đorđe Jugović, zamenik direktora kompanije Termoplín, kaže da prednost njihovih proizvoda u odnosu na konkurentske, osim u kvalitetu, leži u činjenici da oni štede veliku količinu energije.



- Jedan od glavnih ciljeva pri izradi naših proizvoda jeste maksimalna energetska efikasnost odnosno visok stepen iskoristivosti, koji se kreće od 90 do 95 odsto. Naši kotlovi i termogeni mogu automatizovano da koriste drveni pelet, koštice od voća, oklasak od kukuruza, a to su goriva koja gotovo i ne emituju ugljen-dioksid. Ušteda u odnosu na korišćenje standardnih fosilnih goriva, poput nafte ili gasa, može da bude i desetostruka. Takođe, prilikom korišćenja naših uređaja na biomasu, korisnik treba samo da

### Brojne medalje potvrda kvaliteta

- Kao potvrda našim ulaganjima u kvalitet proizvoda i neprestanom inoviranju došle su i brojne medalje na sajmovima od kojih bi izdvojili zlatne medalje na Međunarodnom poljoprivrednom sajmu u Novom Sadu i to: 1994. za jedinstveno rešenje Termogeneratora sa automatizovanim doziranjem čvrstog goriva, 2001. za sušaru za duvan, 2003. za sušaru za voće i povrće i 2004. za toplovođni kotao sa automatskim doziranjem bio mase.

smesti gorivo u spremište sa strane kotla ili termogena, na svakih 24 do 48 sati, odredi željenu temperaturu, a zatim se gorivo automatizovano doprema u ložište gde sagoreva, ukazuje Jugović dodajući da Termoplín na svoje proizvode daje garanciju od pet godina.

Kada je reč o uticaju globalne krize, naš sagovornik ističe da je i pored negativnih efekata u vidu usporavanja ukupnih privrednih aktivnosti, padu likvidnosti preduzeća i banaka, bilo i pozitivnih strana.

- Kriza je navela skoro sve firme i pojedince da preispitaju troškove i da vide da li ih mogu umanjiti, prvenstveno kada je reč o grejanju i uštedi energije. To je konkretno izazvalo to da je naša firma povećala prodaju kotlova, termogeneratora i sušara, koje kao energent koriste bilo koji oblik biomase. Ljudi su do pre nekoliko godina sa podozrenjem gledali na biomasu, a sada je oduševljeno prihvataju, jer je ušteda nesporna, a korišćenje veoma ugodno i čisto, objašnjava Jugović. Kada je reč o planovima za ovu godinu, zamenik direktora kompanije Termoplín



Đorđe Jugović, zamenik direktora kompanije "Termoplín"

ističe da su oni definisani ka rastu i razvoju preduzeća i izlasku na nova inostrana tržišta.

- Pored toga, trudićemo se da osvojimo nove proizvode i uvedemo nove tehnologije u procesu izrade. Planiramo da proširimo prodajnu mrežu za toplovođne kotlove i termogene na biomasu. Cilj nam je taj da kupac može da vidi naše proizvode u svakom gradu u Srbiji, pa bih ovim putem pozvao sve zainteresovane da nam se jave radi poslovne saradnje, zaključuje Jugović.

On ističe i da su čelnici Termoplína veoma zadovoljni saradnjom sa USAID-om i nadaju se da će ona u budućnosti biti još bolja.

- Inače, mi saradujemo duže od 10 godina. Na početku su to bili sitniji poslovi, a sada je već reč o ozbiljnoj poslovnoj saradnji. Međutim, podsticaji države neophodni su u poslu kojim se bavimo. U zemljama Zapadne Evrope su i potrošači koji koriste biomasu oslobođeni jednog dela poreza. U našoj državi u tom smislu, ne postoje nikakvi podsticaji.

### Kupci na domaćem i inostranom tržištu

Neki od kupaca na domaćem tržištu su: "Sagal Food" Beograd; "Chemical Agrosava" Beograd; "Japan Tobacco International" Senta; "Alliance one tobacco" Šabac; "Herba" Beograd, dok na stranom tržištu saradujemo sa firmama poput: "Thermostahl" Rumunija, "Hidra" BiH, "Stević Semberija" BiH, "Hrvatski Duhani Rovinj" Hrvatska, "Aris" Slovačka, "KYRKOS KUVAROS" Grčka, "Philip Morris- Kazakhstan" Kazahstan... Preduzeće "Termoplín" u narednom periodu podjednako računa na značajne velike kupce na bazi dugoročnih poslovnih aranžmana posebno u izvozu, kao i na veliki broj malih pojedinačnih kupaca.



Termogeneratori na biomasu u koji zagrevaju plastenik

The company Termoplin Ltd. was established in 1991. and it produces hot water boilers with the automatic biomass dosing system and thermogenerators with the same system for heating the huge facilities such as cloches, greenhouses, tent halls, industrial halls, farms and withering rooms for fruit, vegetables, remedial herbs, clover, tobacco. There are also cloches and attaching devices for semiautomatic transplantation of vegetables and remedial herbs seedlings within its product assortment.

Đorđe Jugović, deputy director of the company Termoplin, says that besides the quality the advantage of their products in relation to the competitive ones is the fact that they save a huge amount of energy.

- One of our main objectives in respect of making our products is maximum energy efficiency or the highest utilization level which amounts to between 90 and 95%. Our boilers and thermogenerators can automatically use wood pellets, fruit pits, corncobs as the fuels which emit only negligible amounts of CO<sub>2</sub>. Compared with the use of standard fossil fuels such as oil and gas the savings can be up to ten times bigger.

Also the user operating our biomass devices should only put the fuel in the container beside the boiler or thermogenerator every 24 or 48 hours and set the desired temperature. After that the fuel is automatically conveyed to the boiler fuel-chamber where it is burned, says Jugović. He adds that the products of Termoplin carry a five year guarantee.

When it comes to the global financial crisis, our interlocutor stresses that despite negative effects of it such as a slowdown in industrial activities, the decrease in the solvency of the enterprises and banks, there was also the positive side of the recession.

- The crisis forced almost all companies and individuals to reexamine their costs and see if they can reduce them, particularly when it comes to heating and

*The company Termoplin ltd. is specialized in the production of boilers with automatic biomass dosing systems and thermogenerators for heating huge facilities*

## The Crisis Opens the Door to the Energy Saving Devices

### Numerous Medals as the Proof of Quality

- Our investments in the quality of the products and our ceaseless innovation resulted in numerous medals which we won on the fairs. For this opportunity we would pick out gold medals received at the International agricultural fair in Novi Sad: in 1994. we were awarded a golden medal for the unique solution to the generator with the automatic solid fuel dosing system; in 2001. we received a golden medal for the tobacco dryer; in 2003. we got a golden medal for fruit and vegetable dryer and in 2004. we were the winners of the golden medal for hot water boiler with the automatic biomass dosing system.

#### Toplovodni kotao sa automatskim doziranje biomase

Hot water boiler with automatic biomass dosing systems



fuel. Until a few years ago people were

suspicious of biomass and now they willingly accept it because the use of it is convenient and clear and the savings are undeniable, explains Jugović. When it comes to the plans for this year, deputy director of the company Termoplin stresses that they are oriented towards the growth and development of the company and entering the new foreign markets.

- Besides, we are doing our best to make new products and adopt new technologies in the production process. We plan to expand our sale network for the biomass hot water boilers and thermogenerators. Our aim is to make our products available to the buyers in every town in Serbia. Therefore, I would like to use this opportunity to invite all interested customers to call us and begin business cooperation

with us, concludes Jugović.

He stresses that the Termoplin heads are very satisfied with the cooperation with the USAID and they hope that it will be still better in the future.

- We have been cooperating for more than ten years. In the beginning, we launched some minor business initiatives in collaboration with the USAID, but now we have serious business cooperation. In the West Europe countries biomass is partially tax-free for the people who use it as the heating fuel and there are no incentives in relation to this in our country.

energy savings. It made our company increase the production of boilers, thermogenerators and driers which use every biomass type as the

### Our Buyers in Domestic And Foreign Markets

Some of the buyers in the domestic market are: "Sagal Food" Belgrade; "Chemical Agrosava" Belgrade; "Japan Tobacco International" Senta; "Alliance one tobacco" Šabac; "Herba" Belgrade, and in the foreign market we cooperate with the companies such as: "Thermostahl" Romania, "Hidra" Bosnia and Herzegovina, "Stević Semberija" Bosnia and Herzegovina, "Croatian Duhani Rovinj" Croatia, "Aris" Slovakia, "KYRKOS KUVAROS" Greece, "Philip Morris- Kazakhstan" Kazakhstan etc. Within the next period the company Termoplin will also count on the significant wholesale buyers on the long-term business arrangements basis, particularly in the field of export, and on many retail buyers.

# ALFA PELET

## Peć na pelet

Izbor bez greške



ALFA PELET je peć najnovije generacije koja koristi kao gorivo - pelet. **Šta je pelet?**



## ALFA PELET

**Pelet** je gorivo izrađeno od drvene mase, bez hemijskih dodataka i apsolutno nije štetno po zdravlje čoveka i okolinu. Pri sagorevanju ostaje minimalna količina pepela, tako da se čišćenje može obavljati jednom nedeljno. **Pelet** je veoma visoke kalorične moći - do 5,4 KWh/ kg. Jednostavno i lako se koristi. Pakuje se i prodaje u plastičnim džakovima od 15 kilograma, što je dovoljno za grejanje tokom 35 sati. Visok stepen automatizacije omogućava da se peć **ALFA PELET** tretira kao najdraži član domaćinstva - mnogo daje, a gotovo ništa ne traži za uzvrat. Programira se na sedam dana željenog rada. Za **ALFA PELET** proizvođač **ALFA-PLAM** daje garanciju 2 godine. Redovno snabdevanje peletom, takođe, obezbeđuje proizvođač. Kvalitetna servisna podrška je standard koji se podrazumeva. Kod kupovine ovog proizvoda obezbeđen je transport, montaža, puštanje u rad i obuka za korišćenje u objektu kupca!

O kakvom se proizvodu kompanije **ALFA-PLAM** iz Vranja radi, možda je najbolje rekao jedan korisnik iz Italije, gde se peć **ALFA PELET** već uveliko odomaćila: "**IZBOR BEZ GREŠKE!**"

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**ALFA PLAM**

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