DKTI GIZ programme „Establishing a sustainable bioenergy market in Serbia“
Component 3: (Dec 2014 – Jul 2017)

Improving efficiency of firewood utilization in households

4th GBEP Bioenergy week, 22 June 2016
Background situation Serbia:

- Share of biomass for heating in households 67% (Census 2011)
- Selected pilot regions for the project even higher participation of firewood use

Baseline survey 2014:

- Approx. 75% of stoves/heaters are 6 years or older
- Use of seasoned wood (+6 months): Region I: 3%, Region II: 24%
- Real-life $\eta$ measurements (across 12 typical 6-40kW & 3 age cat.)
  - 23% m. c. wood: 44% $\eta$
  - 45% m. c. wood: 28% $\eta$
Component 3: Improving efficiency of firewood utilization in households

**Purpose:**
Indicator 3 of GIZ/DKTI Programme:

Share of households in the pilot regions that are using efficient wood-based heating technologies and/or dried firewood (based on the recommendations of the project team) has increased by 10,000 from 1% to 15% percent of all households in the 2 pilot regions (municipalities of Leskovac, Vlasotince, Uzice, Bajina Basta) using wood fuels

- **Baseline:** 620 households use firewood efficiently
- **Target value:** 10,000 households, if critical assumptions are fulfilled
Approach & activities

Efficient firewood utilization in households

Focus on: consumer

Support access to finance
Education & training of end-users
Establish advisory services

Focus on: the market

Encourage supply of efficient appliances
Facilitate supply of dry wood
Publish standards for efficiency & emissions

Technical assistance to test institutes

Focus on: the enabling environment

Provide policy advice
Assess policy & regulations
Publish standards & technical rule book

Component “Efficient firewood utilization in households” is implemented by:
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**Approach & activities**

- **Focus on: consumer (Demand side)**
  - Support access to finance
  - Encourage supply of efficient appliances
  - Facilitate supply of dry wood

- **Focus on: the market (Supply side)**
  - Publish standards for efficiency & emissions
  - Technical assistance to test institutes

- **Focus on: the enabling environment**
  - Assess policy & regulations
  - Provide policy advice
  - Publish standards & technical rule book

- **Efficient firewood utilization in households**
  - Directly spoke to 7,250 households (workshops, open air events, door-to-door campaign)
  - Distributed 152,000 pieces of info material
  - TV: 58 (interviews, shows)
  - Educational video: TV 46 emissions, 3,500 online views
  - 250 other media (incl national papers)
Approach & activities

Efficient firewood utilization in households

Focus on: consumer

- Education & training of end-users
- Establish advisory services
- Support access to finance

Focus on: demand side

Encourage supply of efficient appliances

- Facilitate supply of dry wood
- Translation of relevant standards (wood fuels & appliances)
- Wood fuel technical rule book drafted
- Testing of appliances in Germany
- TA to test laboratories

Focus on: market

- Technical assistance to test institutes

Focus on: enabling environment

- Assess policy & regulations
- Provide policy advice
- Publish standards & technical rule book

Component “Efficient firewood utilization in households” is implemented by:

- GIZ GmbH
- E4tech
- QED MTRA
Approach & activities

Efficient firewood utilization in households

Focus on: consumer
- Education & training of end-users
- Establish advisory services

Focus on: demand side
- Support access to finance

Focus on: the market
- Encourage supply of efficient appliances
- Facilitate supply of dry wood
- Publish standards for efficiency & emissions

Focus on: the enabling environment
- Assess policy & regulations
- Publish standards & technical rule book
- Facilitate supply of dry wood
- Technical assistance to test institutes
- Engagement around appliances test results
- Regulation – wood fuels & appliances

Component “Efficient firewood utilization in households” is implemented by:
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Additional information

Improving efficiency of firewood utilization in households

4th GBEP Bioenergy week, 22 June 2016
### Achievements: Demand Side/Consumer

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<th>Activity</th>
<th>Achievements</th>
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| Education & training of end-users: household awareness building campaign in the pilot regions | • 85 educational **workshops** with 2,000 participants  
• 4 **open air events** reaching over 750 members of the community  
• Distribution of over 4,830 brochures, 13,360 leaflets, **4,100 pamphlets**; in coop with RDA Zlatibor **120,000 flyers** for 17,000 households (each 3x, 2 years) with recommendations  
• Production of **educational video**, distribution on TV (46 emissions), internet portals (over 3,500 views)  
• 58 appearances of the project team on local TV or radio (incl N1 & RTS)  
• Distribution of over **960 wall calendars** with monthly tips  
• Component **website** hosted by GIZ programme with FAQs re using firewood received over 4,800 visits  
• Over **250** appearances of the project in various other media, incl. national papers |
| Support access to finance                                                 | • Initial overview generated                                                                                                                                                                                                                                                                                                             |
| Establish advisory services                                               | • 7 locally resident **trainers** (2 in 2015, 5 in 2016) were trained to train households in the efficient use of firewood  
• 2 trainers also received the Certificate of Biomass Trading and Logistic Centres’ management training (BioRES) in 2015  
• 2015 the trainers delivered **47 workshops** with **785 participants**, 2016 door-to-door campaign to reach over 4,500 households |

Excellent rapport with trainers

Initial contact with banks: IFIs, EBRD, KfW, IFC

Initial overview generated

Good collaboration with local partners (e.g. Municipalities in Leskovac, Bajina Basta, Vlasotince, Uzice, RDA Zlatibor, PE Srbija Sume, appliances mfgs)
## Achievements: Supply Side/Market

<table>
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| Encourage supply of efficient appliances      | • 5 appliances tested in Germany in 2015, report completed & under discussion with policy makers  
• 12 wood pellet samples tested in 2015, Up to 6 agro pellet samples to be tested in 2016: results for inclusion in technical rule book                           |
| Publish standards for efficiency & emissions  | • EN-ISO 17225-1 to -5 (wood fuels), CEN TS 15883 and EN 303-5 (devices) translated & published with ISS in 2015  
• EN-ISO 16948, 16968, 16993, 16994, 16967 translated, publishing by ISS imminent  
• Further translation for standards for wood fuels & appliances this summer                                                                                       |
| Technical assistance to test institutes       | • Selection of 2 test institutes: Kvalitet Nis (appliances/devices) & Jugoinspekt (fuels)  
• Kvalitet Nis received consultancy visit by Czech laboratory regarding required equipment, premises, testing procedures in January 2016  
• Jugoinspekt receiving consultancy visit by DBFZ/Eurofins duo in June 2016                                                                                   |
### Achievements: Enabling environment

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<tr>
<td>Assess policy &amp; regulations</td>
<td>• Report “Overview of policy and incentives to meet the targets for biomass use in Serbian households with efficient value chains” published in Jan 2015</td>
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<td>• Translated into Serbian Mar 2015</td>
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<td>Provide policy advice</td>
<td>• Individual engagement based on policy report</td>
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<td>• Engagement around results of appliance test</td>
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<tr>
<td>Publish technical rule book</td>
<td>• 1st draft of technical rule book on wood fuels under discussion with industry &amp; policy makers</td>
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<td>• Ongoing identification of legislative opportunities for wood-burning appliances</td>
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