Residential Energy Efficiency and Consumer Choice:

Applying Behavioral Economics in Field Experiments

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USAID/Better Energy Activity
13th International Energy and Investment Day

Serbia - BETTER ENERGY

The purpose of the USAID Better Energy Activity is to address the lack of incentives and investments for renewable energy (RE) and energy efficiency (EE), inefficient use of energy resources, the low level of renewables in Serbia's energy mix, and lack of government capacity to design and implement strategies.

Unlocking $20 billion building retrofit market in Serbia

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- **What is Behavioral Economics:** Studying factors involved in the decisions of individuals
- **Why**
  - To answer one Research Question: What type of information and information transmission mechanisms could potentially increase the number of ***multi-apartment buildings*** whose residents choose to apply for the Serbian government retrofit funding?
    - One piece of the puzzle…

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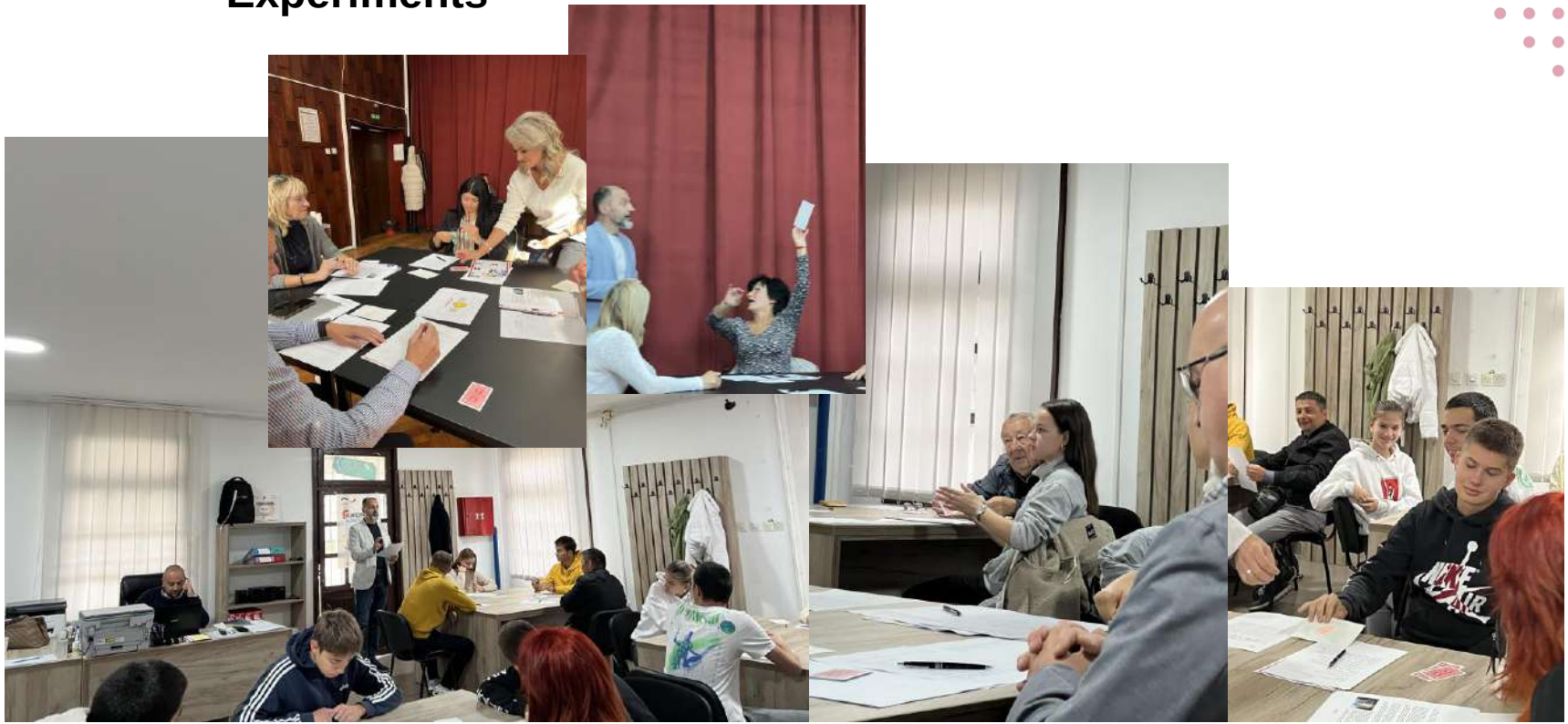

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- ❑ Play a public goods game → *Group outcome is measured* (*Success* =1, *Failure*= 0)
- ❑ Discussion in group (A, B, C, or D treatments)
- ❑ Play the same public goods game again → *Group outcome measured* ***again*** (*Success* =1, *Failure* = 0)
- ❑ Changes in group outcome measured and compared across four treatments (*t*-Test)

<table>
<tr><td colspan="2" rowspan="2">Free Conversation
TREATMENT (A)
(11 groups)</td><td colspan="2">Information Transmission Mechanisms</td></tr>
<tr><td>Push</td><td>Pull</td></tr>
<tr><td rowspan="2">Type of Information</td><td>Monetary Saving</td><td>TREATMENT (B)
(15 groups)</td><td rowspan="2">Choice of Money or Env and Health
TREATMENT (D)
(12 Groups)</td></tr>
<tr><td>Environment and Health</td><td>TREATMENT (C)
(15 Groups)</td></tr>
</table>

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Key Statistical Findings: Talking Helps; Pull vs. Push

- ❑ Talking helps, globally in 53 groups: A 50% retrofitting subsidy generates 75% cooperation rate; Group discussion increases it to 90%.
- ❑ Type of information matters: Monetary saving information increases cooperation rate by 20%.
- ❑ Pulling vs. Pushing: The autonomy to “pull” information increases cooperation rate by 19%, and brings the group together, reducing diverging outcomes by 51%, while pushed information increases divergence.

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Key Findings (cont.)

- Autonomy in acquiring and using information changes behavior: People want to be the owner of information
  - More than half of the participants want to know the retrofit impact on environment and health of their family and community
- Types of information demanded is significantly different by gender
  - Women are more likely to demand for environment and health information than men
- Social norms and preferences for fairness predict the cooperative outcome
  - Stable cooperation behavior and strong concern for equality

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Transaction Costs

- In the experimental setting we reduced the information and transaction costs to nearly zero, whereby participants achieved a 75% success rate even without communication.
- This result is sharply in contrast with the observed outcome in the city of Valjevo, where only 2.5 % of eligible apartment buildings successfully submitted applications in 2021.
- This discrepancy can be viewed as an indicator that reducing transaction costs in retrofit programming could lead to substantial changes in energy consumer behavior.

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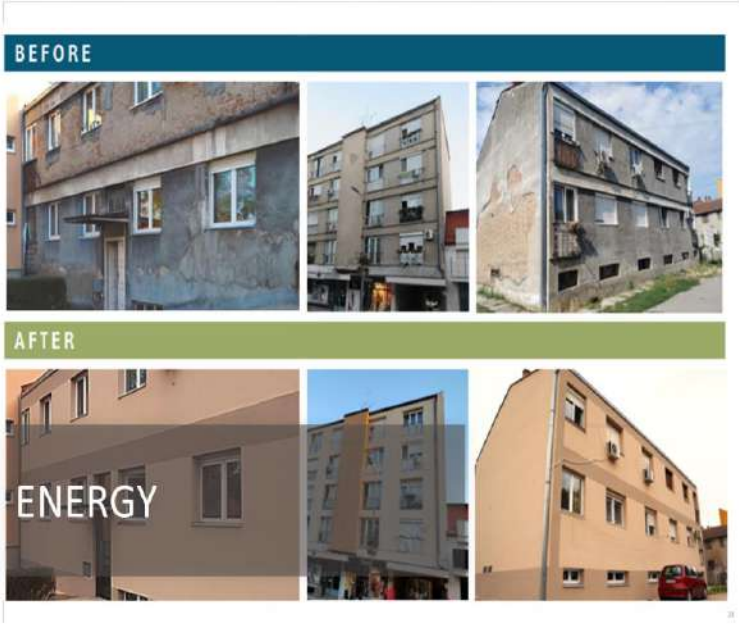
Follow up:

- ❑ Policy implications
- ❑ Work plan
- ❑ Outreach approach
- ❑ Informing country development strategy and new energy program design



To unlocking $20 billion building retrofit market in Serbia

USAID BETTER ENERGY APROACH

POLICY & REGULATORY REFORM: CREATE ENABLING ENVIRONMENT

Focus on necessary legislative and regulatory changes needed to improve management of the housing stock and investments in MAB maintenance

OUTREACH & COMMUNICATION: RAISE PUBLIC AWARENESS

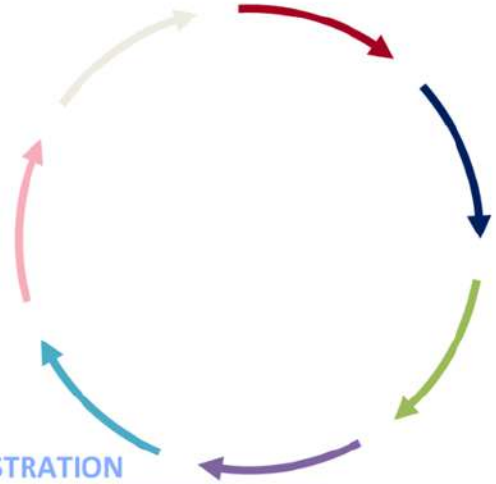
Raise public awareness on costs and benefits of building EE and integrated renewable energy

DEVELOP AN INNOVATIVE FINANCING MECHANISM: LEVERAGE COMMERCIAL CAPITAL

With commercial bank finance
Grant co-financing to correct market failures
Manageable lending risk

PROJECT DESIGN & FACILITATION TA

Offer technical assistance for development of high-quality building energy efficiency investment projects:
Supply side: through increased efficiencies of district heating and development of renewable energy systems
Demand side: building envelope insulation, window/door replacement, heat demand management



CAPACITY BUILDING: BUILD LASTING SKILLS FOR KEY PLAYERS

Develop and roll out capacity building programs for:
HOAs/MABs, private building managers, municipalities, banks

DIGITALIZATION: AUTOMATE PROJECT DEVELOPMENT

Offer low-cost digital solutions for project preparation, analytics and appraisal

DEMONSTRATION

Develop and implement economically viable EE and RE projects, leverage financing from banks, facilitate procurement and quality control of execution

Thank You!

Q & A