EBRD's Experience on Financing Energy Efficiency in Buildings:

instruments, challenges, opportunities

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Sustainable Energy – Key Priority of EBRD in Russia

- Russia – EBRD shareholder and key country of operations (€2.4bn or ~30% of total new commitments in 2009)
- Since 1991 invested in Russian projects €12.2 bln of own EBRD funds and mobilised €9 bln of private sector financing for a total project cost of €40 bln.
- Energy Efficiency – core of EBRD Country Strategy for Russia (2009)
- MoU with Ministry of Economic Development on energy efficiency (2009)
- In Russia, EBRD invested €1,4 bln of own funds in EE projects since 2006
- Buildings (residential and public) – account for 36% of energy use and 30% of CO2 emissions in Russia, and also have the highest emission reduction potential *
- EBRD is launching technical assistance and financing programs to help alleviate barriers to energy efficiency investments in the buildings sector

* McKinsey, “Pathways to an energy- and carbon-efficient Russia,” 2009

Key technical and Commercial Issues in Public Sector

- Generally scope for energy savings is good
  - Building stock very homogeneous
  - Technical potential is high (as expected)
  - Connection with district heating can introduce problems
- However danger that best projects have been cherry picked
- Often difficult to separate pure energy saving measures from general refurbishment needs (which don't pay back purely from energy saving)
- Technical capability good but limited commercial experience
- Municipal budgets very limited – but good driver for EPC
- No strong private companies willing to take ESCO risk – test approach with municipal ESCOs (to be privatised later on)

Key Regulatory Issues in Public Sector

- Public finance law very restrictive – no contracts with financial commitment beyond budget period (usually one year)
- Procurement laws follow standard approaches but focus on cost of investment not value of savings
- The contract price cannot easily be varied to account for performance so difficult to allow for shared savings (how to "guarantee" variable payments to ESCO in the budget?)
- Budget laws make use of cost savings from reduced energy consumption difficult but can be solved
- No dedicated EPC legislation (new EE law in Russia introduced ESCO concept, but detailed regulations still pending)
- Wide range of other issues to navigate around but can be done

EBRD ESCO Programme

- 2007 – EBRD signed €7m loan to Bulgarian ESCO Fund sponsored by Enemona
- 2008 – launched programme to develop ESCO/EPC structure for Russian public sector funded by $9m grant from the GEF
- 2008 – launched similar programme in Ukraine funded with grant from Czech Republic
- 2009/10 – Intensive work in Russia and Ukraine to establish basis of EPC model

Bulgarian ESCO Fund

- Owned and managed by Bulgarian construction company Enemona which has developed public sector ESCO business in Bulgaria
- Objective to purchase receivables under ESCO contracts implemented by Enemona: frees up working capital for Enemona to do new ESCO business
- Initial capital of BEF ~€12m including €7m loan from EBRD
- In second phase considering additional finance and opening the fund to any ESCO contract meeting basic conditions
- Parallel technical assistance programme now being considered to support local authorities in preparing EPC contracts and running tenders

EBRD Activities in Russian Public Buildings

- ESCO Programme to develop and finance Energy Performance Contracting in Russia
- Main funding of $10m from GEF covering technical assistance for capacity building and implementation support
- Aim to support both municipalities and private companies to develop an ESCO market in Russia
- Various ESCO models available - Bulgarian model; Surgut model and Ukraine model

Pilot ESCO Project - Surgut

- Initial work in Surgut, Western Siberia: 300,000 population, existing EBRD client
- Existing municipal organisation ‘Deasis’ responsible for maintenance of public building stock
- Manages 297 buildings used for education, health and culture, youth and sports
- Walk through audits conducted in 5 typical buildings. Initial analysis indicates savings of ~20% from “pure” EE measures (ventilation, lighting, heating, water conservation)
- Total investment RUB180 million (€4.2 m), payback <6 yrs.

Proposed ESCO approach for Russia (pilot project in Surgut)

- Possible solution – for utilities no contract time limit exists and tariffs can vary
- Municipal contract (5-7 years) with DEASIS for “turn-key” energy outsourcing and building maintenance, with energy efficiency and comfort level targets
  - DEASIS receives payment for utilities from the city according to **baseline** consumption
  - Buys energy from utilities & supplies to buildings **according to factual** consumption
  - Invests own funds into EE measures (EBRD loan)
  - Difference between baseline and factual utility expenses – profit
- City needs to adopt an energy saving programme for the duration of the contract in order to “budget” for utility payments to Deasis according to **baseline**

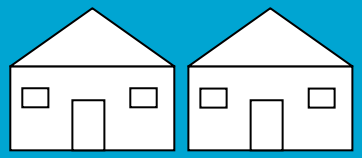
ESCO Programme – Ukraine

- Initial work in Dniepropetrovsk, Zaparozhia and Odessa
- Legal, commercial and technical issues very similar to Russia
- Commercial EPC solution proposed for Ukraine is to complete all investments within budget period (ie 1 year), then ESCO just has on-going savings guarantee
- Dniepropetrovsk has already established municipal organisation responsible for buildings maintenance
- Now moving forward with investment programmes in at least two of the cities
- Extensive technical assistance programme to support project development and implementation

Alternative ESCO Model - Financial Flows before the EPC project Implementation - YEAR 0

Municipality

Municipality pays operational costs of the municipal budgetary organisation. Operational costs include energy costs – approved annually in the municipal budget – specific budget item



Municipal En. Manag. Enterprise

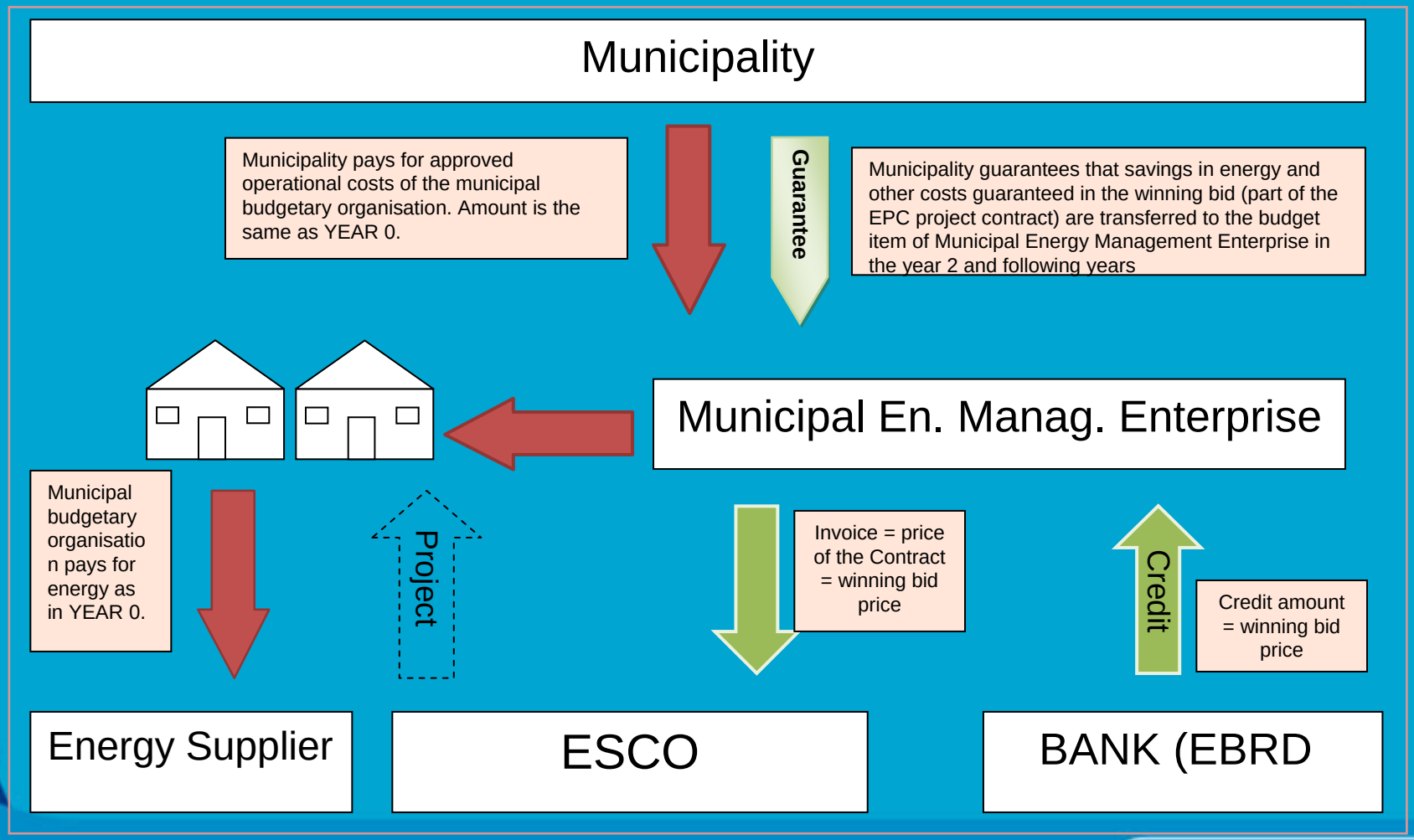
Municipal budgetary organisation pays for energy to the supplier on the basis of advance payments and the annual final calculation.

Energy Supplier

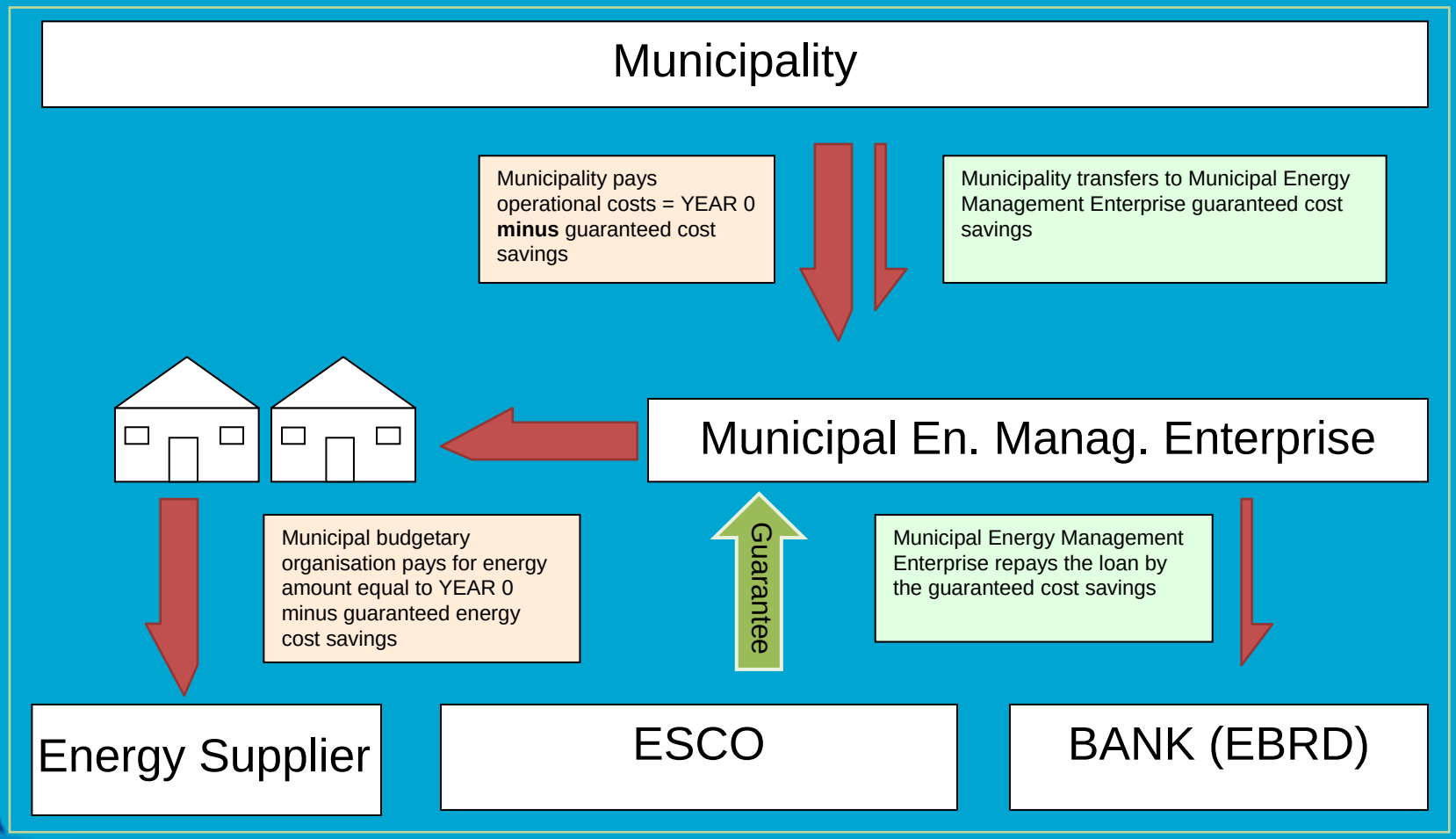
ESCO

BANK (EBRD)

Alternative ESCO Model - Financial Flows in the year of the project implementation - YEAR 1



Alternative ESCO Model - Financial flows after the EPC project implementation



New ESCO Concepts – Moving Forwards

- Budget and procurement regulations – proposed solutions will address known issues but are relatively complex so will need careful preparation for first projects
- Experience of local authorities in developing contract structure and tender procedures – needs high level of technical assistance
- Local engineering and construction firms have limited experience of ESCO contracts and traditionally enjoyed plentiful work based on conventional contracting. However in current climate more willing to take some risk at least for construction
- Initial idea to establish dedicated fund to finance EPCs now considered for second phase. Initially will finance municipal energy companies directly but still base repayment on energy savings
- Similar programmes now being launched for Bulgaria, Kazakhstan and Romania

Barriers to Financing EE in Russian Residential Sector

- Limited experience in collective management of buildings and mobilisation of funding
- Unclear status of housing associations as a borrower – non-commercial intermediary without collateral or revenue stream (source of repayment)
- Risks of housing associations (HA) and management companies (MC)
  - Residents have a right to quit HA, HA can be easily dissolved
  - No long-term contracts between residents and management companies
  - Residents may re-elect management company on annual basis
  - No legal obligations of residents to make payments if HA is dissolved or MC re-elected
  - HA and MC have no assets or collateral

Barriers to Financing EE in Russian Residential Sector (II)

- High cost of complete capital refurbishment of buildings (**RUR 5-7 tsd** /sqm/month;) vs. maximum affordable payment of residents (~ **RUR 20** /sqm/month) = **payback of >20 years**
- However some EE retrofits can be affordable (~**RUR 0.8 tsd/**sqm/month) = payback < 4 years
- Need for targeted assistance to low-income residents
- Importance of state support (e.g. co-financing of capital measures, interest rate subsidy for loans to MC or HA), especially for complex retrofits with long payback periods

Energy Efficiency in the Residential Sector

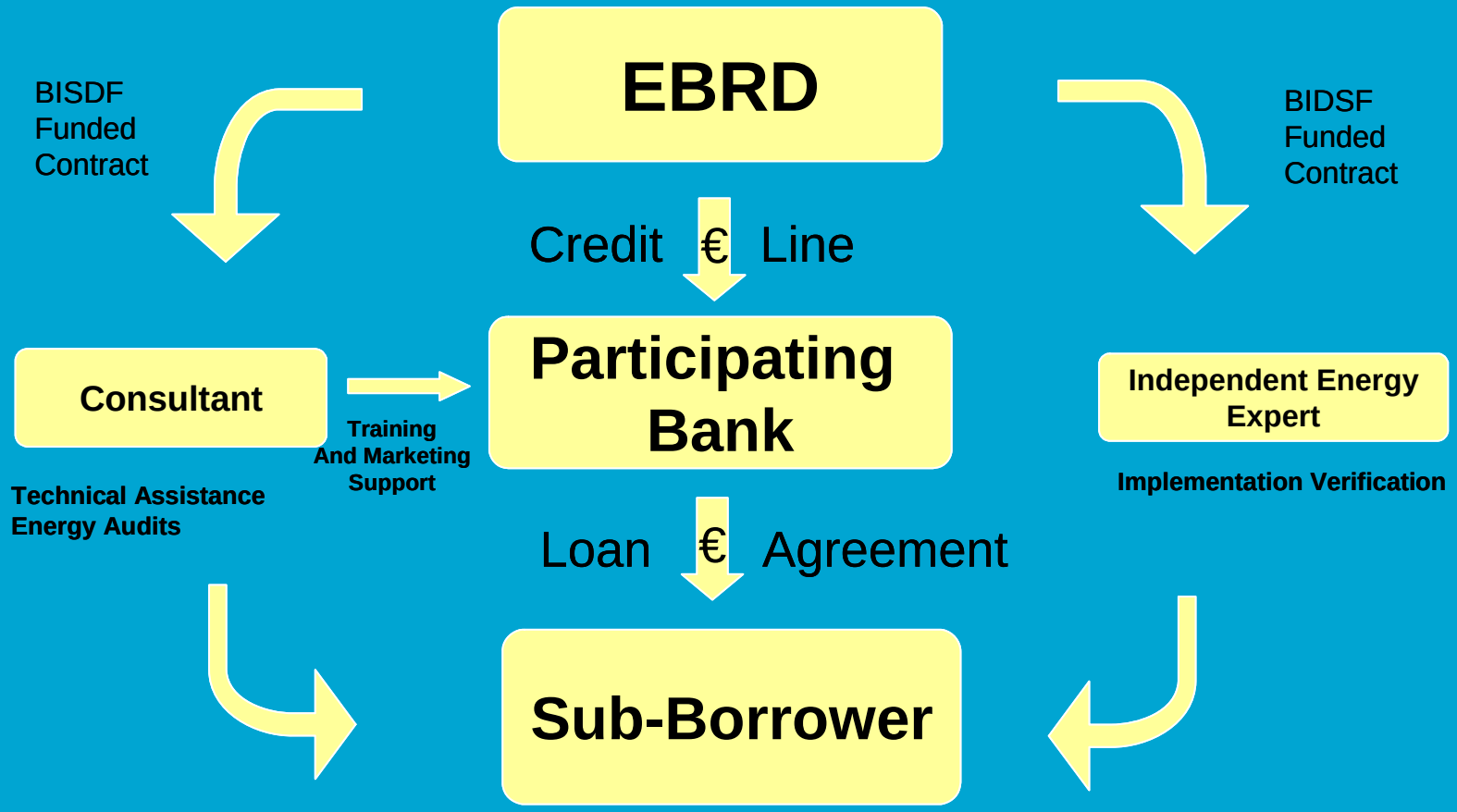
- SEFFs – EBRD programme of credit lines via commercial banks to finance homeowners' energy efficiency improvements
- Different approaches depending on market development:
  - **Individual (retail) lending to households** for measures at the level of the house / apartment within defined eligibility list. (e.g Bulgaria)
  - **Bundled approach** - as above but with incentives and technical support to promote collectivised approaches to multi-apartment buildings (e.g. Bulgaria)
  - **Direct lending to creditworthy housing associations** or condominiums, together with technical assistance that supports institutional strengthening and implementation of EPBD (e.g. Slovakia)

Slovakia Sustainable Energy Finance Facility - www.slovseff.eu

- EBRD Credit Line EUR 60Mil out of which ~ EUR 30Mil for residential EE
  - Financially intermediated by 4 local Slovak banks
  - Eligible Sub-Borrowers
    - Housing Associations
    - Housing Cooperatives or
    - Building Management Companies

- Grant Support Bohunice Int'l Decommissioning and Support Fund
  - Technical Assistance
    - **Simple Energy Audit + Energy Performance Certificate**
  - Performance-Based Incentives to Sub-Borrowers and Banks
    - 20% of the related loan amount, upon successful implementation and verification

Structure of SLOVSEFF



Bulgarian Residential Energy Efficiency Credit Line - www.reecl.org

- EBRD Credit Line of EUR 50 Mil
  - Financially intermediated by 6 local Bulgarian banks
  - Individual (retail) lending to households for measures at the level of the house / apartment within defined eligibility list. (e.g Bulgaria)
  - Eligible Sub-Borrowers = Individual Households or Collective Applications

- Grant Support Kozloduy Intl Decommissioning and Support Fund
  - Technical Assistance
    - List of eligible equipment with defined technical specifications and minimum energy efficiency characteristics
    - List of eligible suppliers
  - Performance-Based Incentives to Sub-Borrowers and Banks
    - 20% for individual borrowers
    - 30% if min. 50% of the households in a block of flats apply collectively;

EBRD Activities in Russian Residential Sector

- EBRD and IFC are providing support to Ministry of Regions on the development of supporting regulatory framework (housing regulations and building standards)
- EBRD and IFC are rolling out $10m GEF-funded programme designed to alleviate barriers to EE retrofits of multi-apartment residential buildings
- Technical assistance will be provided to municipalities and other stakeholders (e.g. housing associations) on the development of housing refurbishment programs
- Dedicated financing mechanisms will be established (e.g. credit lines for housing associations/management companies; establishment of regional funds to co-finance housing refurbishment; guarantees and risk sharing, or ESCO mechanisms)

Thank you!

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