Pioneer experience in rural microgrids

- **Santo Antão (Cape Verde)**
- **Las Balsas (Ecuador)**
- **Akane (Morocco)**
- **Isla Floreana (Ecuador)**
- **Cal Peraire (Spain)**
- **Escuain (Spain)**
- **Atouf (Palestine)**
- **Diakha Madina (Senegal)**
- **Beni Said (Morocco)**

**Beginning:**
Country house electrification (Spain)

- **1994**
- **1997**
- **2002**
- **2005**
- **2006**
- **2007**
- **2009**
- **2012**
- **2013**
Innovative concept: Energy Daily Allowance (EDA)

- Traditionally in conventional grid connection: users pay for consumed kWh
- In autonomous electrification with RE: Key aspect is the constrain on available energy
- In RE electricity, user should pay for availability not for the consumed energy
- Tariff based on the **Energy Daily Allowance** (fee for service)
- Clearer and easier financial planning for operator and for client
- It reduces transaction costs because of flat fees
Electricity Dispenser essential for EDA control

- Patented & Innovative smart metering concept.
- Energy budget.
- Extend battery lifetime and performance.
- Promotes consumer awareness of energy self-management.
- Low transaction costs.

- Dispenser as a buffer water tank: gets a constant trickle inflow from the micro-grid proportional to the contracted EDA
- The tank empties as energy is used
- Balanced consumption: equal to the fill up rate
- Capacity eq. to 3 days EDA
- Use energy anytime but cannot store more units than the tank’s capacity