

# The Fondo de Inclusión Social Energético (FISE) LPG Promotion Program in Peru

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# FISE Program

- Public, national-scale program
- Built-in private partnerships
- Housed within the Supervisory Organization for Investment in Energy and Mining (OSINERGMIN)
- Began in 2012, currently ongoing

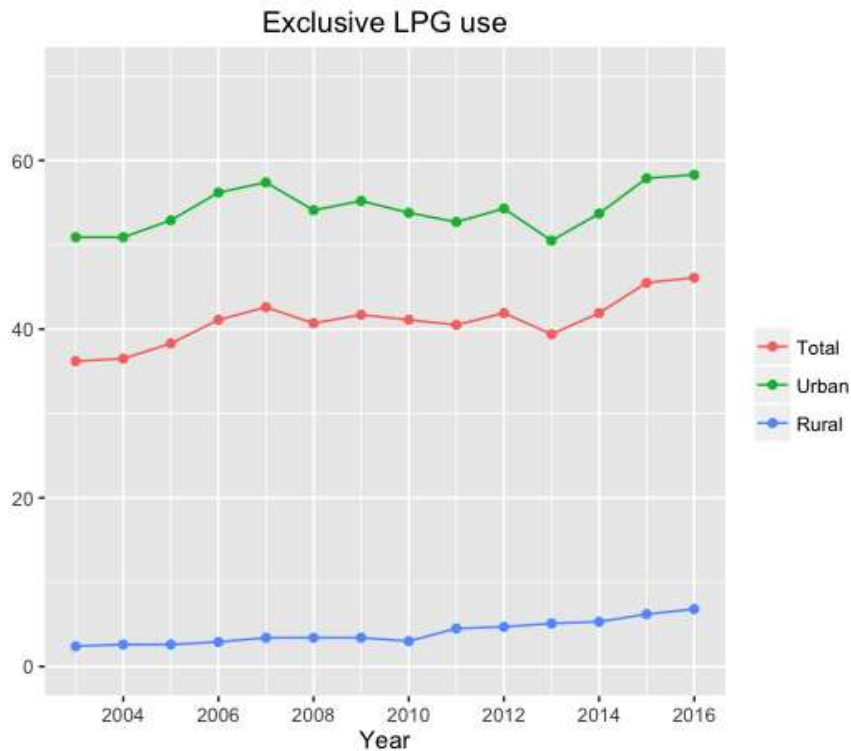


# FISE Program

- Overarching goal: “bring cleaner energy to the most vulnerable populations of Peru”
- LPG promotion program is one of four pillars:
  - Expansion of natural gas (domestic and vehicular)
  - Expansion of renewable energy
  - Compensation for residential electrical costs
  - Promotion of LPG for domestic use



# Percent Exclusive LPG Use in Peru 2003 - 2015



Data source: Instituto Nacional de Estadística e Informática, Perú



Photo credits: Suzy Pollard (above), Brooks Morgan (below)



# Financing

- Program costs: \$82.3 million/year (2014)
- Financed by:
  - surcharges on deregulated consumers of electricity
  - surcharges on supply of liquid hydrocarbon-derived products and natural gas
  - monthly surcharges for users of natural gas transport systems

# FISE LPG Promotion Program



- Provides vouchers of S/.16 (\$4.90) per month for 10kg LPG tanks
  - Voucher for half a tank of LPG/month
  - Households identified by numeric code on electrical bill
  - LPG vendors use text-message based system to redeem vouchers
  - Participants retrieve new LPG tanks from designated retail points (LPG cylinder recirculation model is implemented in Peru)
  - LPG distributors are the same for FISE and non-FISE



# FISE Structure

- **OSINERGMIN** – FISE supervisory body, Ministry of Energy and Mining
- **Energy Distribution Companies (EDEs)** - Regional implementers, administrative and operational arms are responsible for voucher distribution, census of beneficiaries, overseeing LPG agents
- **LPG agents** – responsible for LPG distribution – work directly with LPG distribution companies



# LPG agents

- LPG distribution relies on network of authorized, private LPG “agents” overseen by energy distributors
- Often small shop owners who apply to become LPG agents
- LPG vendors use text-message based system to redeem vouchers



# Canje del vale de descuento FISE

Para canjear el balón de GLP sólo deberás ir a un local de venta de gas autorizado FISE con tu DNI, el vale y el dinero restante.

Si deseas más información sobre FISE y los beneficios para tu comunidad, acude a la empresa eléctrica más cercana.

## Llevamos energía a más peruanos.

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Hecho el Depósito Legal en la Biblioteca Nacional del Perú N° 2014-05683



Photo credit: Kendra Williams



# Eligibility

Eligibility criteria:

1. Household in lowest five socio-economic categories of National Household Targeting System (“SISFOH”)
2. Household income < \$5,583 per year (i.e. \$465 a month)
3. Household has no electricity or consumption < 30 kWh/mo.
4. Precarious housing (home visit)



# National Program Reach

- Expanded from 8,658 households (2012) to 1.6 million (2017)
- Expanded from 5 LPG vendors accepting vouchers (2012) to 4,587 (2017)
- Program is currently operating in 100% of departments in Peru, 98.1% of districts

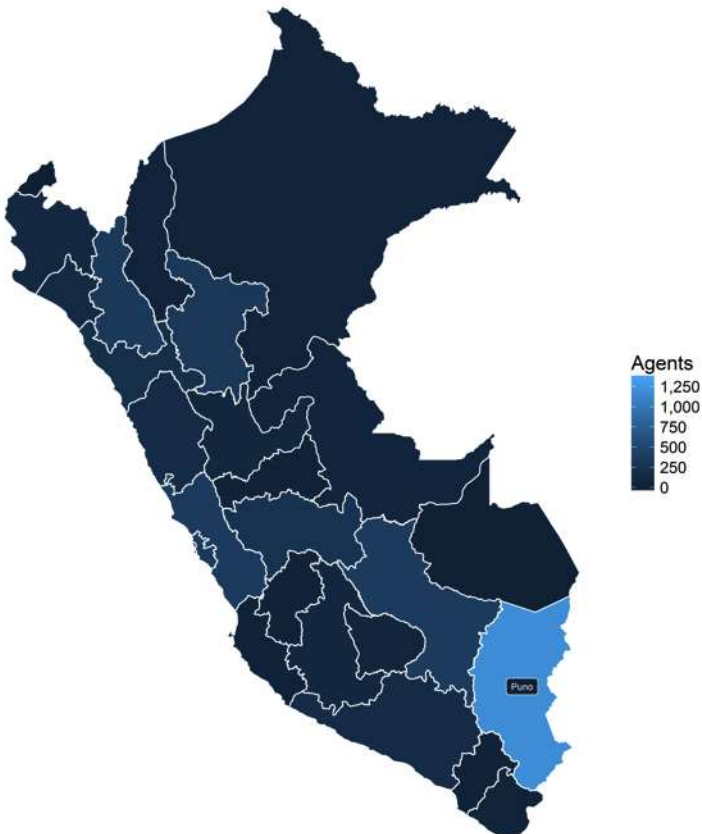
# Number of FISE beneficiaries (A) and LPG agents (B) by region.



A.



B.





# Case Study Methods & Data Sources

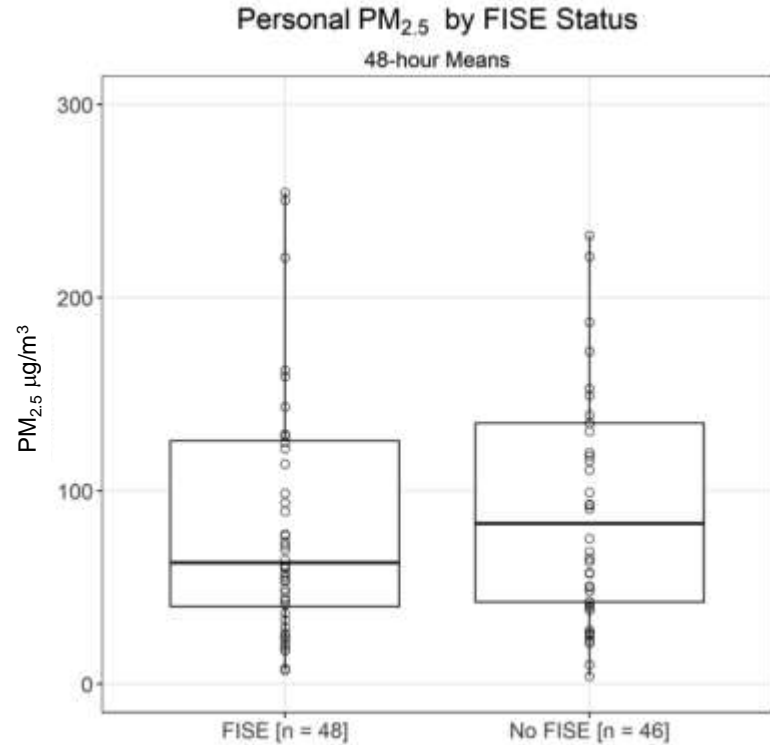
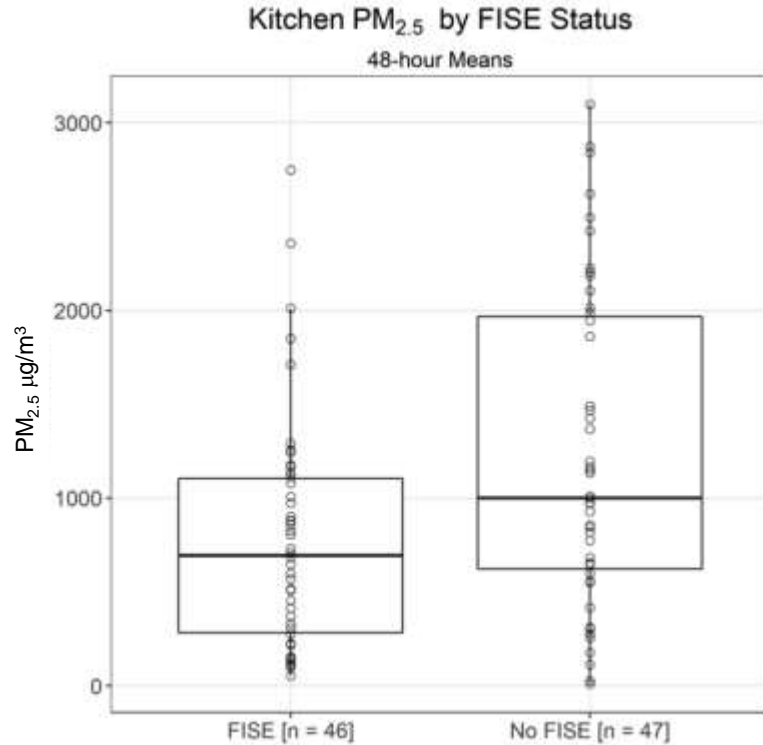
- Publicly available & administrative data (INEI, FISE)
- Consultations and site visits with FISE leadership
- Representative survey of 375 households (rural Puno)
- In-depth interviews with
  - 8 community members (beneficiary and non-beneficiary)
  - 6 key stakeholders (FISE representatives/regional implementers, local authorities)



# LPG Adoption among FISE beneficiaries

- Adoption high; stove stacking also high.
  - 96.5% vs. 24.8% of beneficiaries vs. non-beneficiaries currently use LPG stove ( $p < 0.001$ )
  - **4.5% vs. 2.0% reported current exclusive use of LPG stove ( $p=0.21$ )**
  - 92.9% of beneficiaries began using LPG **after** FISE enrollment

# PM<sub>2.5</sub> Exposures in FISE vs. non-FISE





# Barriers to LPG Adoption

- Key perceived barriers:
  - Challenges obtaining LPG (distance, public transportation, cost)
  - Complexity of enrollment process
    - If don't use vouchers for 4 months, are discontinued; after 12 months, must re-enroll
  - Supply chain issues
    - No gas available (16% reported as barrier)
    - FISE tank doesn't last as long (62.3% reported as barrier)
  - \*Voucher doesn't cover full tank (87.5% reported this is a problem); price fluctuation depends on market





# Evaluation Take-Aways

- Stove stacking highly prevalent
- In Puno, ~2 tanks needed to support exclusive use (½ cylinder voucher does not support exclusive use)
- Structure and division of labor in program allows for large-scale implementation and adaptation, but potential for inconsistency
- Surcharges may be sustainable model for large-scale program

# Thank you



*Photo credit: Brooks Morgan*