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Transformation Works: Electricity Distribution Georgia and Kabul

Presented at:

USAID INFRASTRUCTURE WORKSHOP

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Presented by:

David Keith

Tetra Tech



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Outline of Presentation

- Georgia UEDC – case study of a successful turnaround
- Da Afghanistan Breshna Sherkat,
Kabul Electricity Distribution – introduction to a turning...





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Georgia UEDC Case Study

Introduction

- The state-owned UEDC serves 70% of the Georgian territory, with about 2.5 million residents in its service territory.
- The company has a long history of intense corruption and mismanagement:
 - Assets were sold off to insiders
 - Cash disappeared; records were destroyed
 - Collusion on procurements; inflated prices, kickbacks
 - The company never properly defended a single legal case, losing as much as \$35 million in judgments a single year.
- Government attempts to privatize had failed; in response the Georgian government requested donor assistance to manage the company.
- The donor community as a whole supported this idea, and USAID agreed to sponsor a **management contract**. PA Government Services Inc. took on this USAID assignment, following competitive tender.
 - *Note: PA Government Services Inc., the international development division of PA Consulting Group, was subsequently acquired by Tetra Tech in 2010*



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Georgia UEDC
Typical Customers





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Georgia UEDC
Technical Condition of the Network





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Georgia UEDC Management Contract

This contract was part of the USAID Georgia Energy Security Initiative, a multi-pronged effort to address utility operations, rural energy requirements and private sector development in the energy sector.

It was comprised of two back-to-back contracts:

- One with the Government of Georgia that provides for the rights and responsibilities, governed under UK law
- Another with USAID to finance the effort.

For a management contract, it is somewhat unusual in that the contract was not performance based (i.e., there are no performance targets explicit in the contract nor reward/penalties associated with performance).

- Instead, we negotiated periodically with the GoG and with USAID the specific targets to be achieved during a particular period of time.

The contract started in May 2003, for an 18-month period, but was later extended until the utility was successfully privatized.



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Georgia UEDC

Congratulations! You Won the Contract

What we expected:

- 3,200 employees
- 660,000 customers
- Limited cash on hand at least to fund daily operations
- Cash collection rate of at least 20% from which to begin work
- Ability to work with the banking system
- Limited technical qualifications of staff
- Some metering infrastructure in place.

What we found:

- 6,200 employees
- More likely, +700,000 customers
- Not a dollar in petty cash and no equipment supplies on hand
- Cash collections of only 10%
- Bank loans had been booked as collections to artificially boost performance
- Salaries were not being paid
- Credit lines were fully extended
- No safety training, no equipment on hand
- Less than 10% of customers metered adequately.



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Georgia UEDC

Challenge – Improve Reliability of Supply

Response:

- First, target predictability of supply, then move towards reliability.
- Distinguish paying customers from non-payers through improved metering.
- Start with communal metering and billing in most locations.
- Meter all wholesale inlets and outlets, keep track of energy balance and losses.
- Find a way to group customers to better manage. For example – electricity user groups, village chiefs.
- Gain government support for strict disconnection policy.
- But, in return for payment, ensure much better levels of service.

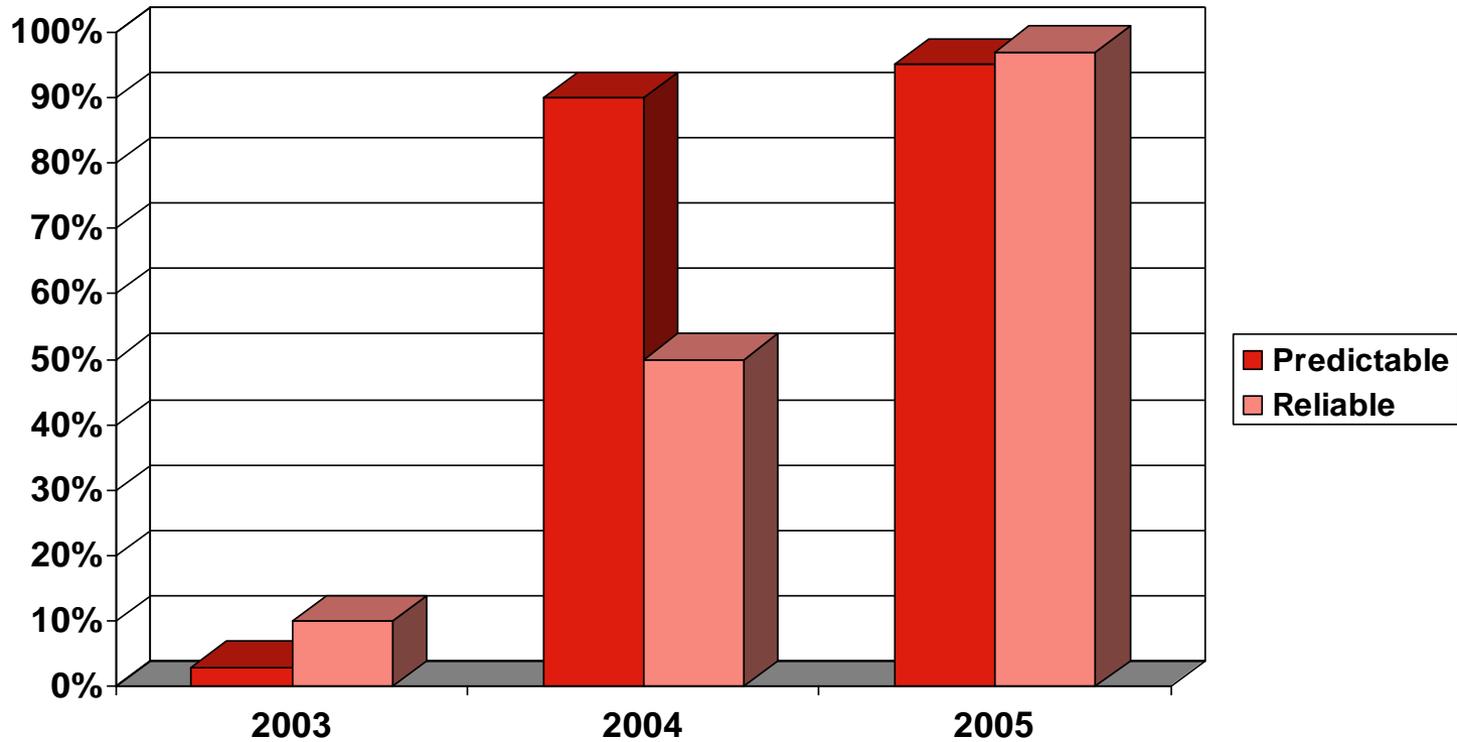


***New Communal
Meter Installation***



Georgia UEDC

Percentage of Customers with Predictable and Reliable Supply (Winter)





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Georgia UEDC **Challenge – Endemic Corruption**

Response:

- We formed a commercial security service within the company, led by a German trained prosecutor.
- Incumbent management sacked.
- Internal controls put in place, buttressed through IT infrastructure.

Results:

- 990 cases of electricity theft investigated recovering over \$1 million.
- Criminal prosecution of over 70 former management, employees and customers.
- Over 50% conviction rate.





Georgia UEDC **Challenge – Improve Human Resources**

Response:

Qualification testing for all staff, followed by dismissals.

Massive reorganization

- Downsized the organization by half
- Turnover of 70%.

Apprenticeship and training programs.

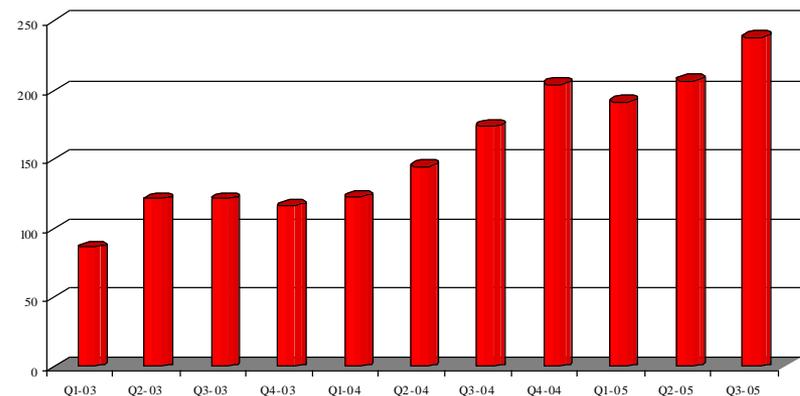
Detailed job descriptions developed.

Improved salary structure.

And, paying salaries in full and on-time (which was news).

Response:

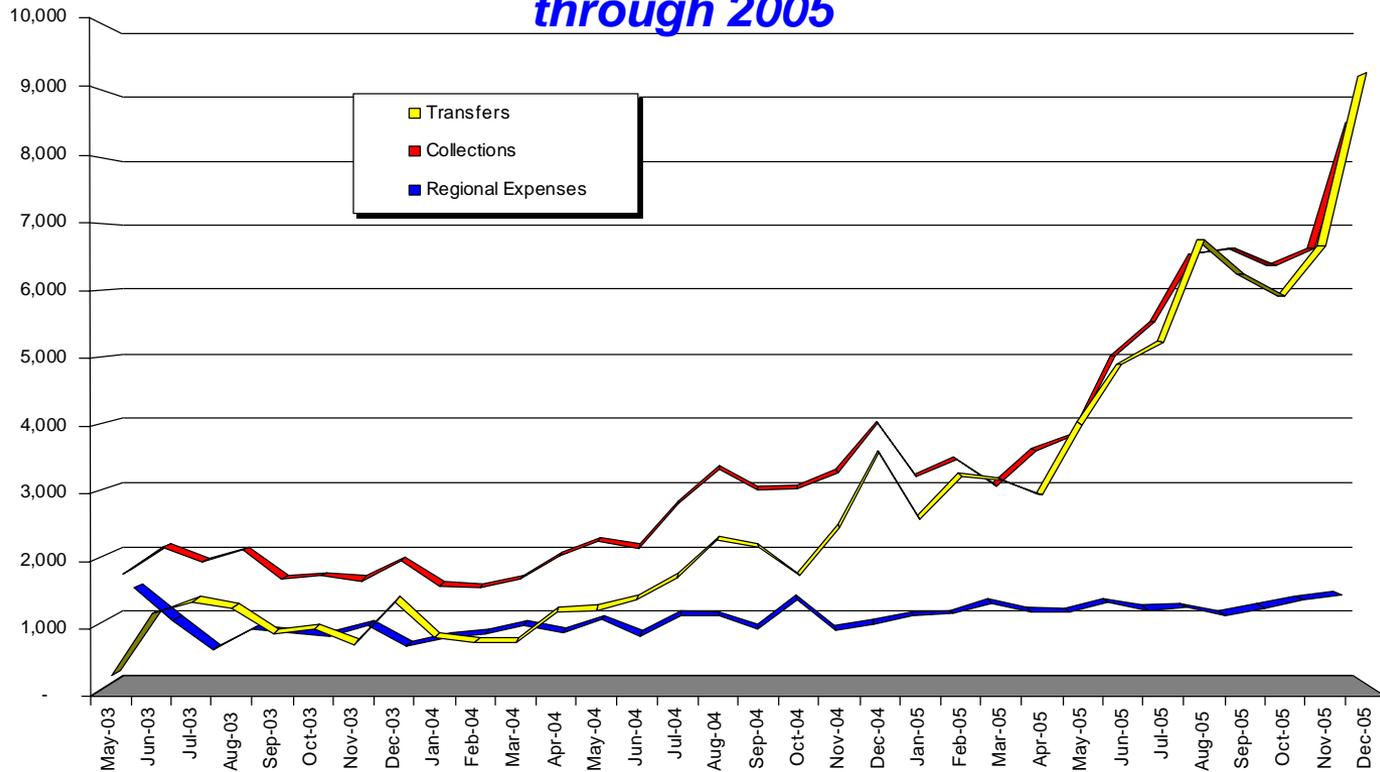
As we reorganized and weeded out, average salary increased for those who were qualified





Georgia UEDC – Collections and O&M Expenses from 2003 through 2005

**GEL
(000s)**



Note – O&M expenses does not include bulk electricity supply purchases



Georgia UEDC
Overview of the Challenges and Results

Challenge	What Our Team did about it	Results
<p>Corruption at all levels Few internal controls No accountability Poor financial performance Poor technical performance Poor governance Poor customer service; little concept of consumer protection</p>	<p>Massive staffing changes. IT systems (billing, accounting). Monthly targets for management; dismissals for failure to meet targets. Communal wholesale metering. Consumer protection function established. Litigation against debtors Remetering of end-users</p>	<p>Staffing levels reduced by 50%; turnover ~ 70% of original staff. All new management team, including non-energy specialists. Financing operations entirely from internally generated cash. Average salaries tripled and were paid in full and on-time. All current tax obligations were being paid in full.</p> <p>Ultimately, successful privatization of UEDC to Energo Pro as part of a \$300 million transaction</p> <p>USAID project ends</p>



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Da Afghanistan Brezhna Sherkat (DABS) Kabul Electricity Directorate (KED)

دفتر مرکزی شرکت برشنا،
کابل

Da Afghanistan Breshna Sherkat
Headquarters in Kabul



- DABS is the National Electric Company of Afghanistan
- Although DABS is owned by government, it is being managed as a corporation rather than as a government bureau
- On September 30, 2009, DABS took over operation of the electricity system from DABM, the legacy government electricity entity from Ministry of Energy & Water
- KED is the part of DABS that supplies Kabul



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Kabul Electricity Directorate (KED)

- KED, supplies about 70% of DABS revenues.
- KED has 1,500 employees
- KED has approximately 245,000 customers.
- Peak power supply now available to Kabul is approx 330 MW.
- The bulk of the on-grid electricity needs in Kabul are supplied from a series of hydro power and fossil fuel plants located around Kabul province, and through power imports from neighboring country, Uzbekistan.
- A new USAID-funded 100 MW diesel thermal power plant was commissioned in 2009, further strengthening bulk power supply in Kabul.
- Heavy reliance on self-generation of electricity by embassies, ISAF, NGO's, and commercial enterprises, rather than connecting to KED





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DABS – The DABM Legacy Inherited

- DABM produced no financial statements for the past 25 years, along with the lack of a formal system to account for costs.
- Just a paper-based accounting system, all done by hand, with no routine verification or controls.
- No records available on assets and/or liabilities.
- No records that can accurately report technical and commercial losses.
- No “public utility culture” (one that recognizes customer service as a valid concern)
- Procurement processes which lack transparency and are subject to abuse and corruption
- As many as 185 bank accounts for which there is no reconciliation and which offer opportunities for revenue leakage





USAID's Kabul Electricity Service Improvement Program

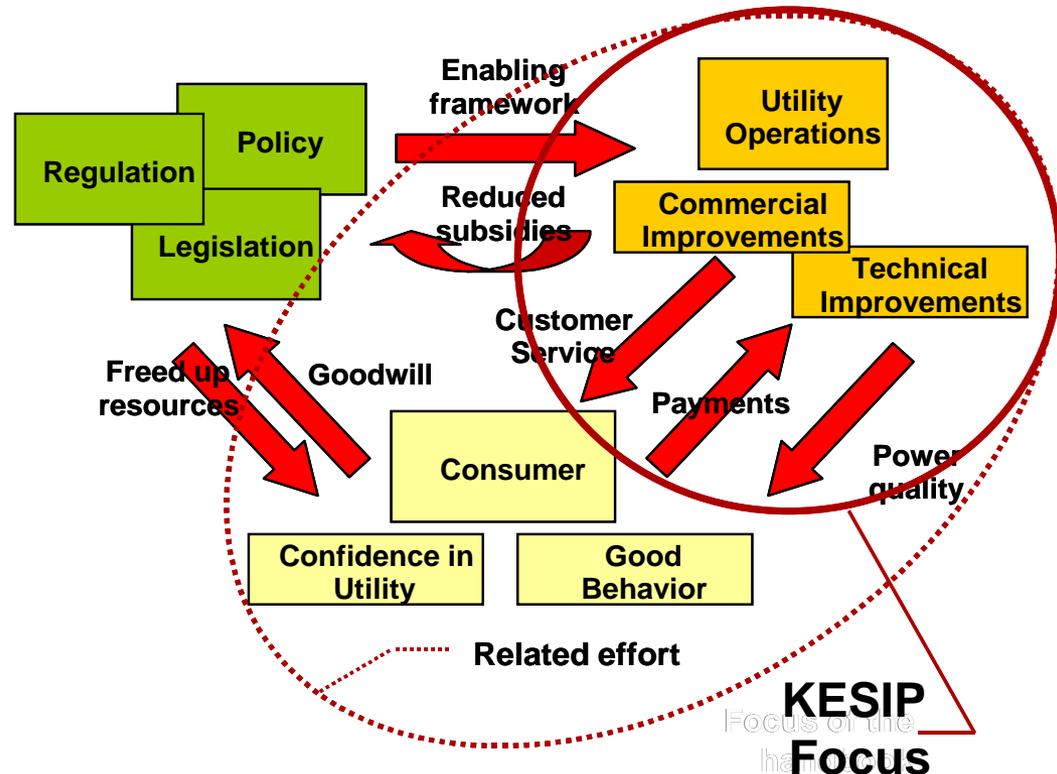
USAID signs contract with Tetra Tech

Tetra Tech signs Commercialization MOU with DABS for KESIP

KESIP focuses on operational improvements within DABS and KED

Improved utility operations will go a long way to addressing chronic distrust amongst consumer groups

At the same time it will begin to alleviate the burden on government resources



The goal of KESIP: Enhance DABS-KED utility's core business

It is important to get the commercial foundation built and use that strength to then systematically tackle the difficult challenges



Strategy: Transition from DABM (state bureau) to DABS (commercial enterprise)



- **Introduce professional management**
 - Restructure management to reflect a modern electricity corporation
 - Functions and titles need to be matched with management expertise/capability
 - Incentivize individual performance
- **Focus on increasing revenue and reducing costs**
 - Measure inputs and sales
 - Reduce outstanding debt by issuing proper bills and collecting those bills
 - Plug leaks, remove illegal connections
 - Improve customer service and, by extension, customer satisfaction
- **Create a master program for commercial change**
 - Management needs to preside over development of an integrated, global, master plan for performance improvement
- **Measure performance**
 - You cannot manage what you do not measure
 - What gets measured gets done
 - Establish baselines
 - Track improvements and struggles
 - Back measured results by incentives



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Put a Public Face on Reform: With DABS, We Signed Commercialization MOU on Afghanistan's National TV



Dec 8, 2009



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Key Terms of Commercialization MOU

1. Tetra Tech Advises DABS in the Management of KED

- Advise on management of personnel, assets, finance, commercial operations
- Help establish efficient operations, focus on reducing losses and collecting revenue
- Assist the HR transition of personnel to new DABS culture
- Prepare and implement an annual plan for capacity building and staff training.



2. Tetra Tech Designs, Procures, Installs, Trains on Specific Improvements

- Customer enumeration into electronic billing system
- Accounting system based on ERP database, including payroll, HR, supply chain
- IT systems, including LAN, WAN and facilities upgrading
- Meters, especially for bulk electricity and large customers
- Vehicles and tools, especially for commercial operation and loss reduction



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Principles for Operational Improvement

We work to instill these within DABS and KED:

- 1. The primary source of money flow into DABS needs to evolve to become collections from customers, rather than donors**
- 2. Customer service will be the key to financial health and sustainability**
- 3. A program of incremental change – step-wise improvement, we help them to first crawl, then walk, then run**
- 4. Afghan leadership and capacity development – the future is in their hands**





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Tactics: KESIP Kit for Operational Improvement

USAID is providing an equipment budget of \$14 million.

We are undertaking these initiatives:

- **Customer service for improved cash collection efficiency**
 - Some technology, but mainly human processes, including customer enumeration and 'regularization'.
- **Utility company IT system for DABS (starting from scratch – hardware, network, software, training)** - Financial accounting, human resources, management information, customer database, metering / billing / collection system, asset management, customer service
- **Tools and Vehicles** - Basic equipment for KED, such as cranes, trucks, lineman's kit, meter reader's kit, safety gear, uniforms
- **Bulk metering for system energy balance** - Enable KED to determine where their losses take place by measuring at multiple points in the distribution system.
- **Revenue Metering** – Introduce improved system of customer metering, focused first on large customers. Install World Bank-funded meters.





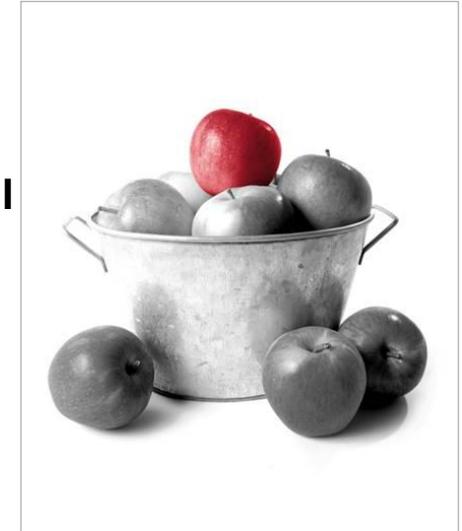
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Tactics: Prioritize Improvement

Pareto Principle suggests that we focus initially on a small number of high value customers, then expand from that base as the improvement program progresses

- There may be only a small number of large industrial customers, but the commercial tariff is higher
- On a per-kWh basis, the cost to serve larger customers is lower, and so their value to the utility is very high



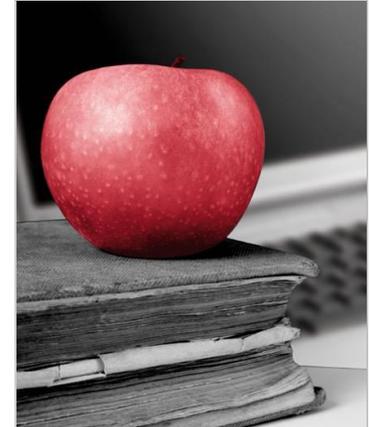


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Conclusions

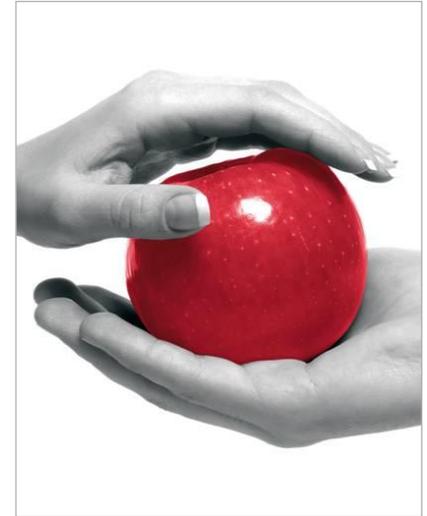
- Afghanistan has political will to reform (e.g. Minister of Finance)
 - But Minister of Energy & Water remains, and opposes reform
- DABS executive management is committed to lead the change to commercial orientation as its top priority
 - USAID is providing professional discipline
- Start simple and low-tech, then grow in complexity
 - Recognize DABS/KED initial technical limitations and starting competency endowment, and nurture wherever we can
- Don't try to do it all right at the outset
 - A gradual, step-wise approach will be more sustainable
- Build a fiscal base from which DABS can launch additional improvements
 - Focus on cash collections





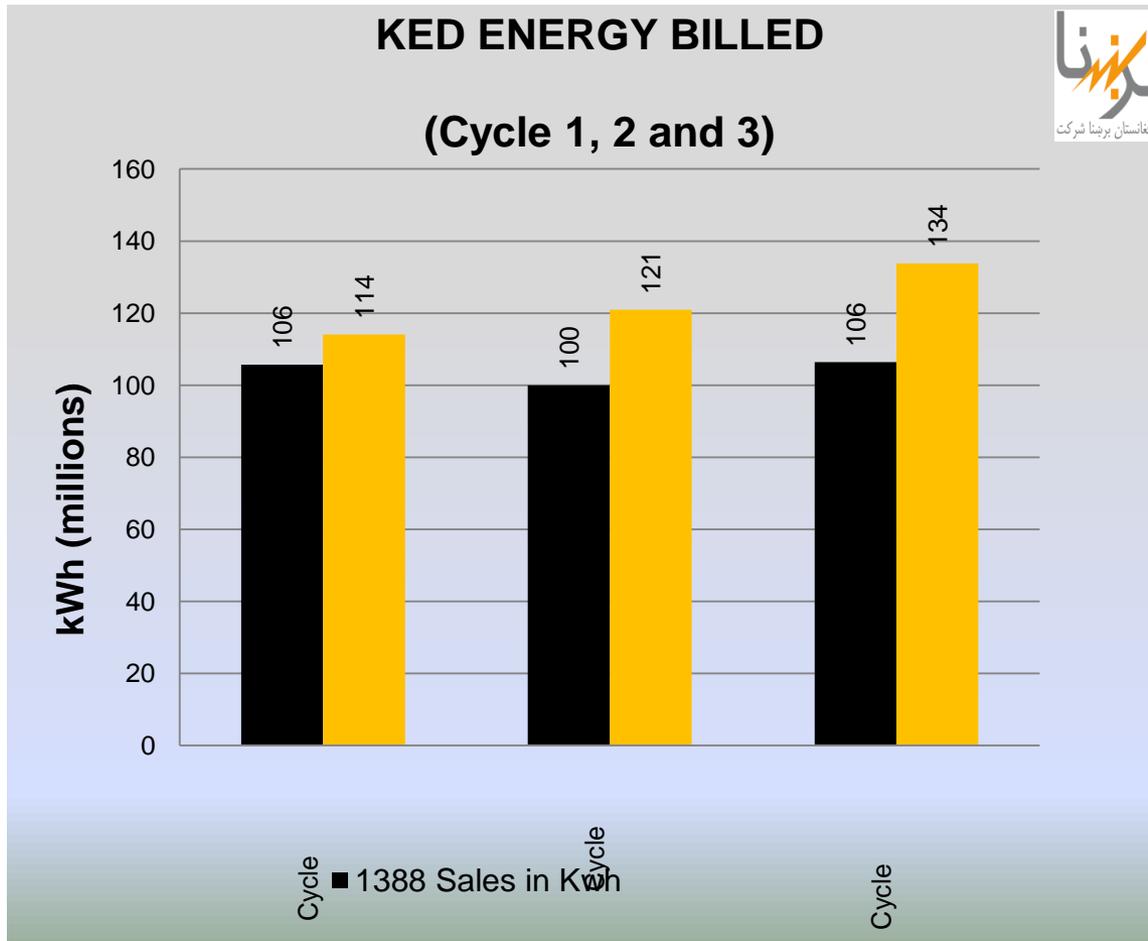
Conclusions

- Lasting commercial improvements are fostered by both internal and external efforts
 - DABS and KED business processes must change and performance measures must be applied
 - Improved quality of electricity service and customer relations will breed responsible consumer behavior
- Incremental progress is success in itself; we cannot eliminate all losses and subsidies in a short period of time
 - Commercial losses (corruption) in electricity distribution start with bribes paid to front-line employees (meter readers, collectors)
 - Creating a culture of serving a paying KED customer (and serving them well) reinforces the willingness of customers to pay
- Kabul is unique; culture and conditions will dictate what is an appropriate approach
 - Afghanization is critical - solutions must be customized to a volatile situation





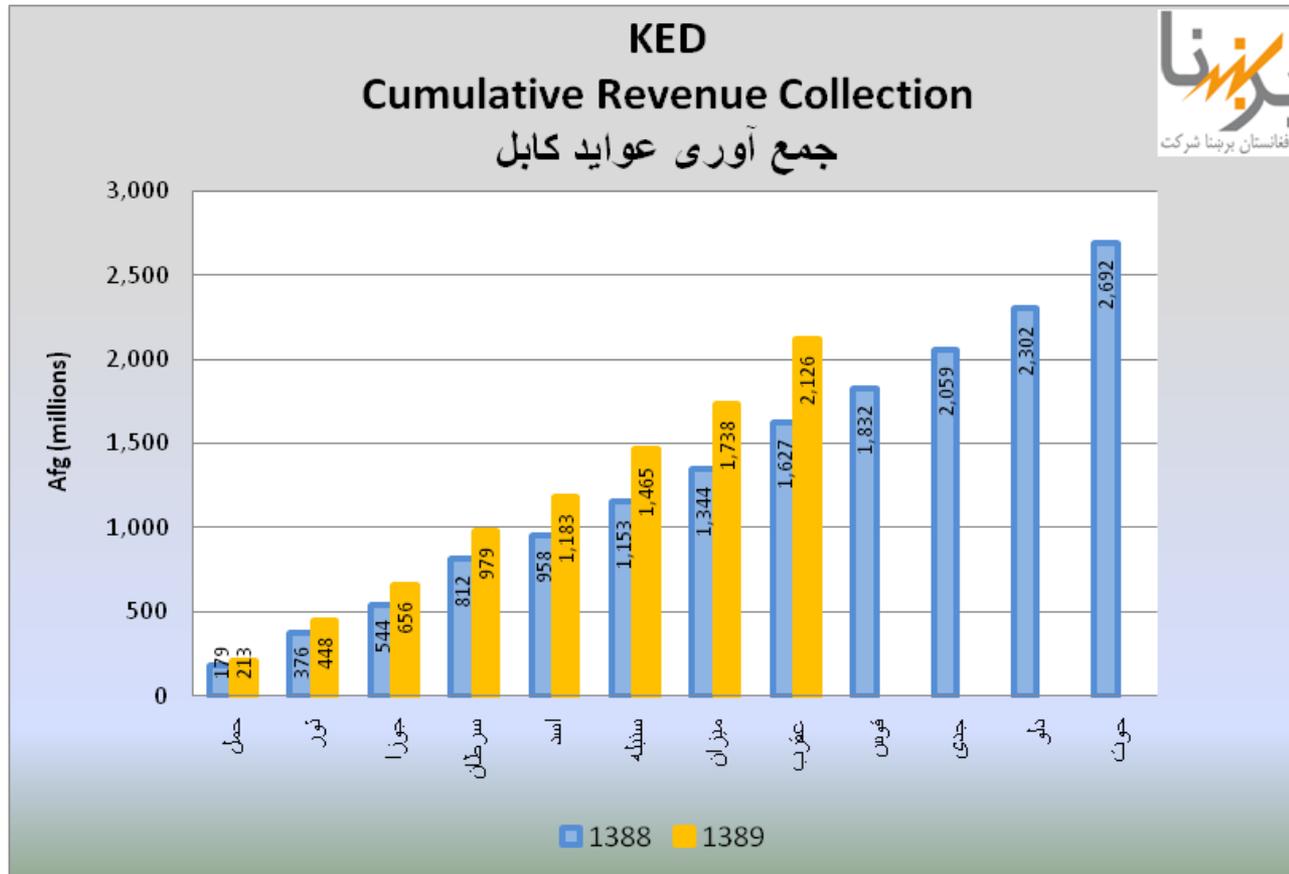
KESIP after 1 year – Energy sales (kWh) are up 18%



Energy Supply
is more reliable

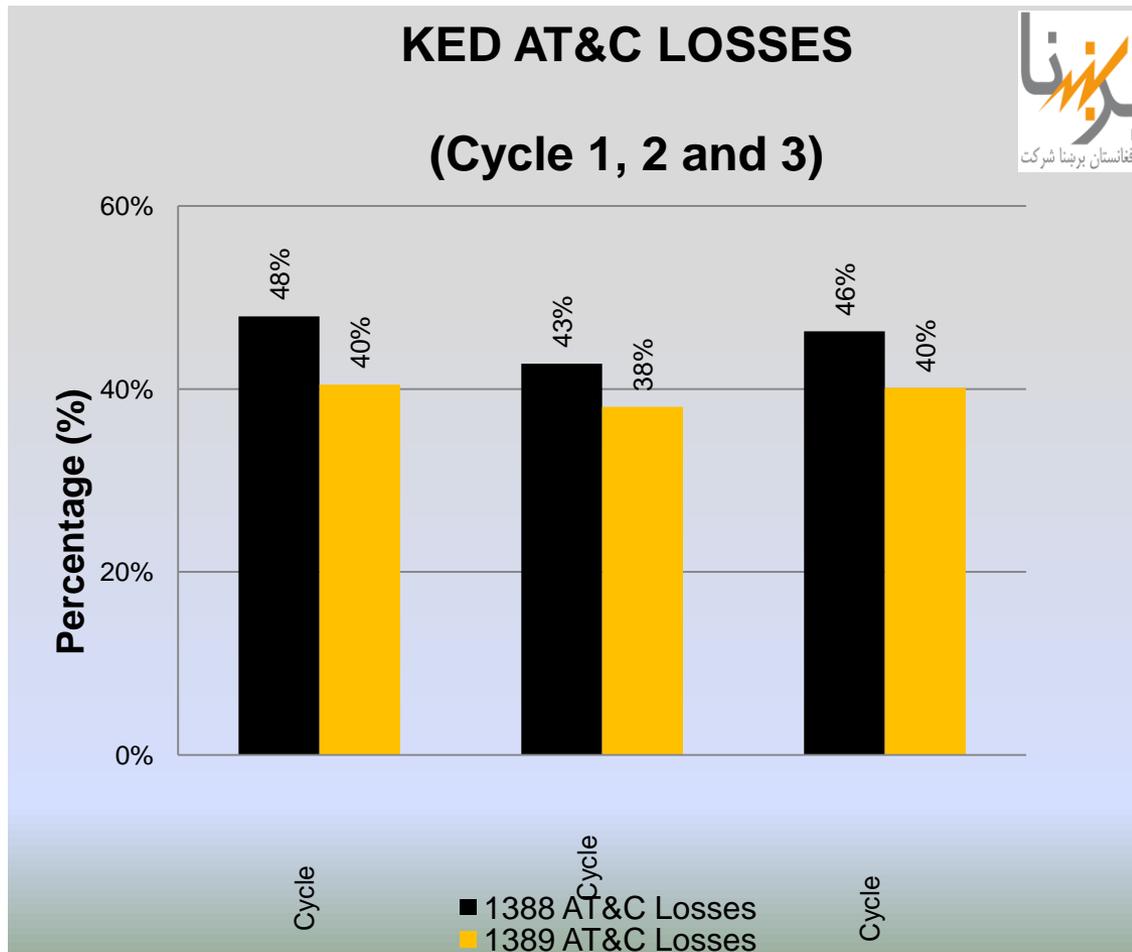


KESIP after 1 year – Cash collections are up 30%





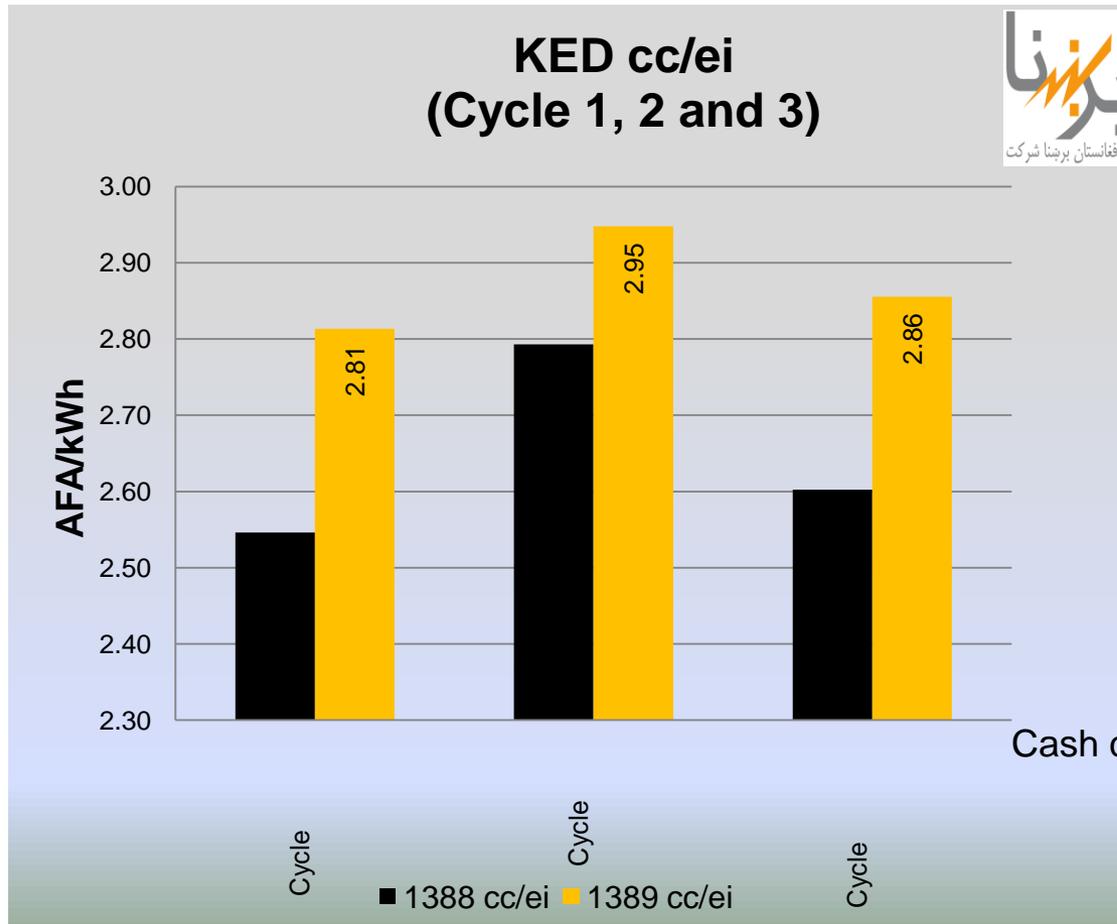
KESIP after 1 year – Losses are down about 6%



AT&C Losses =
Technical Losses +
Commercial losses +
Nonpayment losses



KESIP after 1 year – Conversion efficiency is up 8%



CC/EI =

Cash collected / energy input



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**The early returns
look good...**

**but there is still much
work to do.**

**And DABS still needs a
lot of basic tools!**





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Thank you!

