



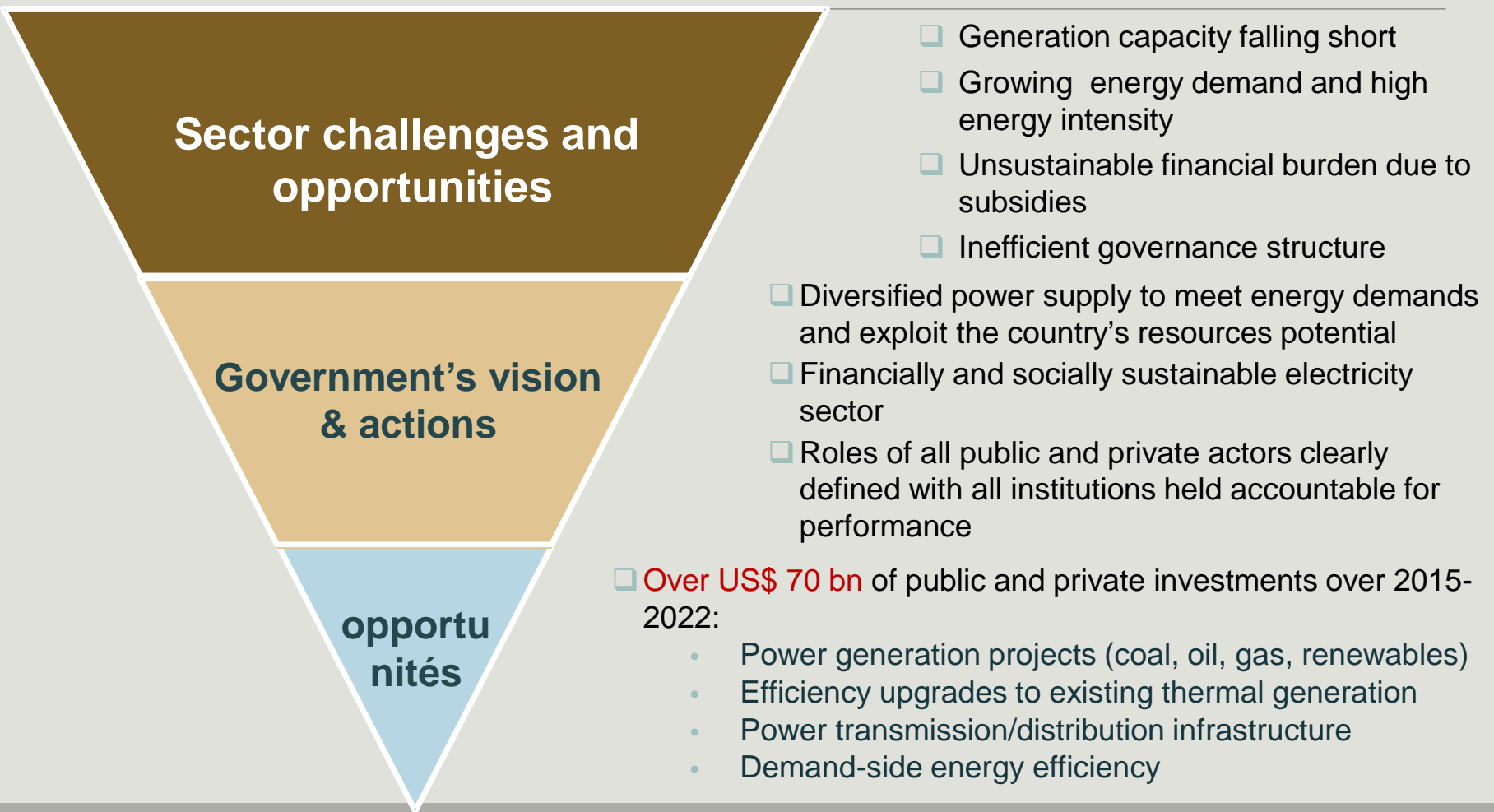
# *“Addressing Egypt’s Electricity Vision”*

---

*Minister of Electricity & Renewable Energy:  
Dr. Mohamed Shaker El-Markabi*



# The Government is committed to address the electricity sector's bottlenecks



# The power sector has a strong development potential...

## Key competitive advantages of the sector

- Significant development potential with a robust, multi-decade track-record
- **54 GW** of new installed capacity (conventional and renewables) needed through 2022
- Highest wind energy potential in the MENA region (30GW) and high intensity of direct solar radiation ranging between 2000 – 3200 kWh/m<sup>2</sup>/year
- Ongoing reforms in the regulatory framework and subsidies creating large opportunities for the private sector
- Beneficial opportunities for regional trade not yet fully developed



---

# **I. SECTOR CHALLENGES AND OPPORTUNITIES**

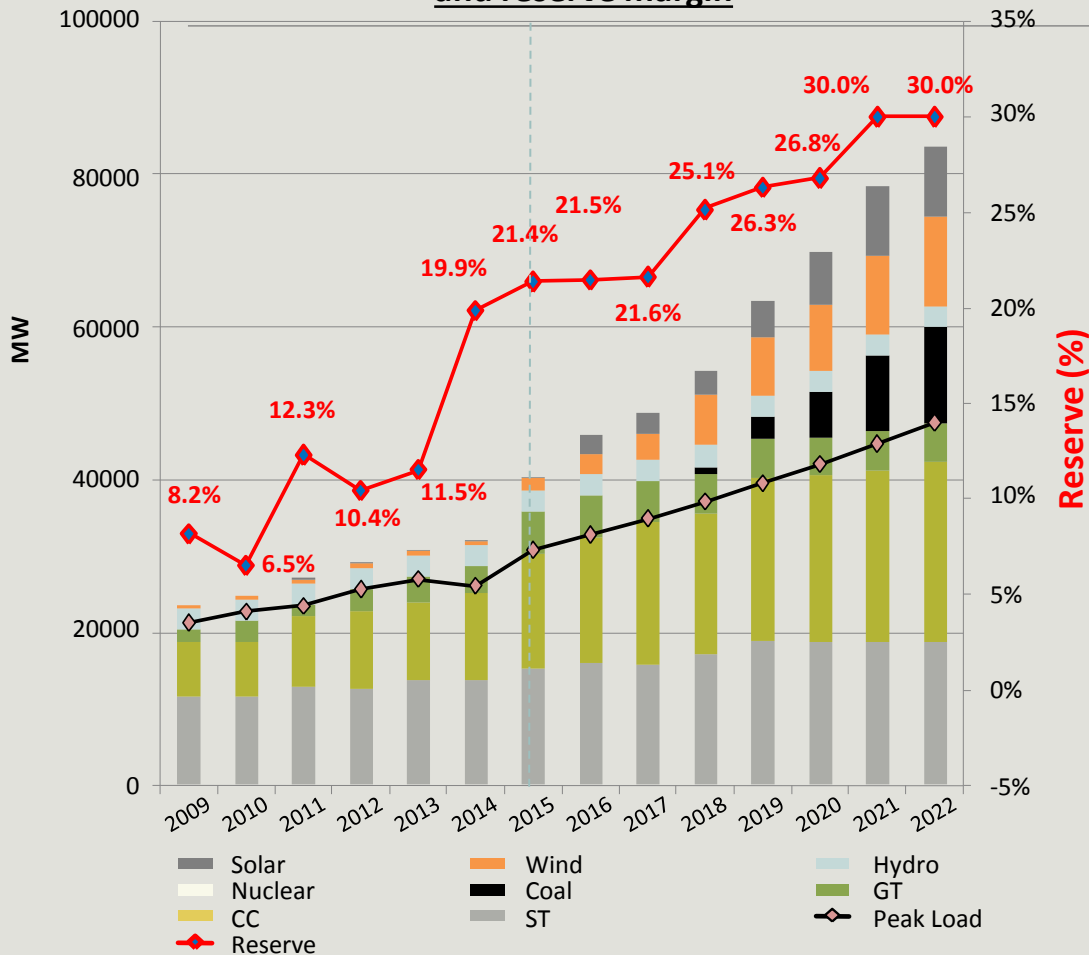
# Challenge #1: Ensuring power generation security

Challenge	Issues
<b>Rising supply &amp; demand energy gap</b>	<ul style="list-style-type: none"><li>■ Electricity demand growth exceptionally high (6% p.a.)</li><li>■ Power generation deficit (6 GW needed annually through 2022)</li><li>■ High energy intensity: 26KBTU /\$ in line with large net oil exporters</li><li>■ low reserve margin relative to peak demand (11.5%)</li></ul>
<b>Undiversified power generation mix</b>	<ul style="list-style-type: none"><li>■ Excessive reliance on thermal assets (90+% of installed capacity)</li><li>■ Frequent power outages due to natural gas and fuel shortages</li></ul>
<b>Potential for efficiency gains</b>	<ul style="list-style-type: none"><li>■ Room for power generation efficiency gains of 20% without changing existing assets stocks</li><li>■ 1/3 of thermal capacity is &gt; 20 years</li><li>■ Power plants availability and efficiency rates 5-8% below benchmarks</li><li>■ 15% losses in transmission and distributions</li><li>■ Limited integration to regional energy markets</li></ul>

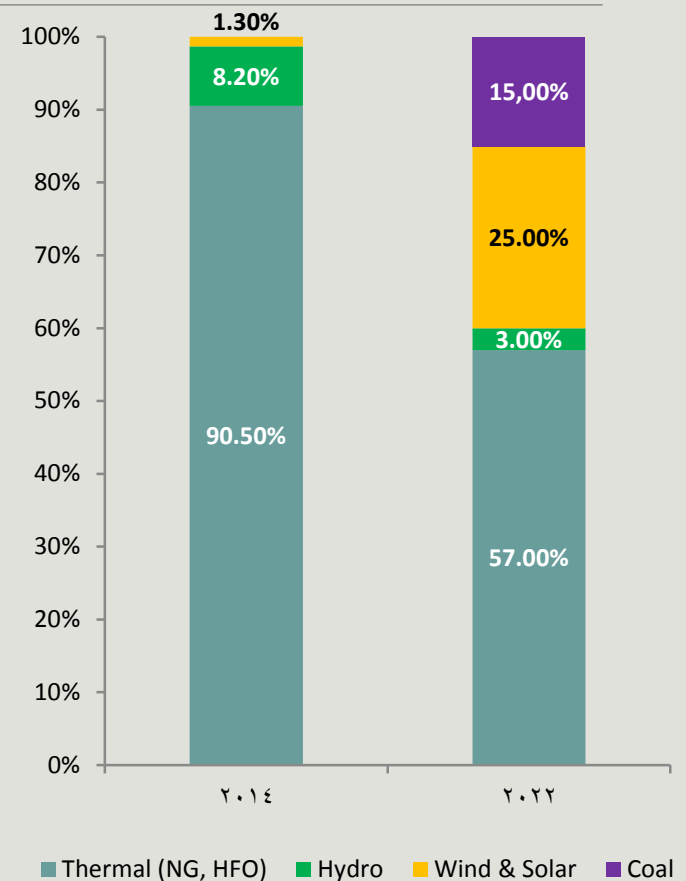
# Challenge #1: Power generation security (cont.)

Generation plans call for a marked acceleration in the construction of **54 GW of** new capacity by 2022

**Government power generation expansion plans and reserve margin**



**Generation capacity mix from 2014 to 2022**



Source: Ministry of Electricity and Renewable Energy

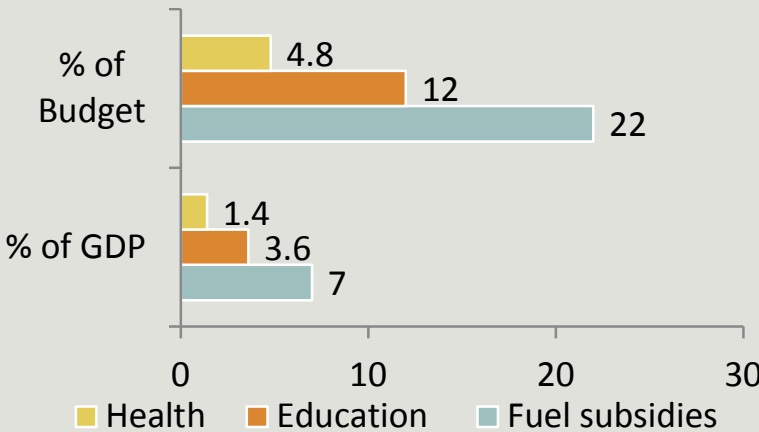
## Challenge #2: Financial sustainability

Challenge	Comments
<b>Subsidies represent a huge fiscal burden</b>	<ul style="list-style-type: none"><li>■ Chronic underpricing of electricity inputs</li><li>■ Energy subsidies reached 7% of GDP in 13/14</li><li>■ Far outstrip social sector spending (x5 health, x2 education)</li><li>■ A significant % of subsidy does not reach the targeted</li></ul>
<b>Circular debt and contingent liabilities</b>	<ul style="list-style-type: none"><li>■ Ministry of Finance falling behind on subsidy payments to EEHC</li><li>■ Other public entities also fail to pay for power</li><li>■ EEHC's current financial situation affected by the increasing pressure on its revenues and cash flow, rising operating and investment costs, and high indebtedness</li><li>■ \$3 billion of contingent liabilities for IPPs from the MoF</li></ul>
<b>Inefficient social safety nets</b>	<ul style="list-style-type: none"><li>■ Lack of effective redistribution mechanism</li></ul>

# Challenge #2: Financial sustainability (cont.)

In July 2014, the government announced a clear roadmap to bring electricity tariffs to cost recovery levels within the next 5 years

**Comparison of energy subsidies (including O&G) with social expenses**

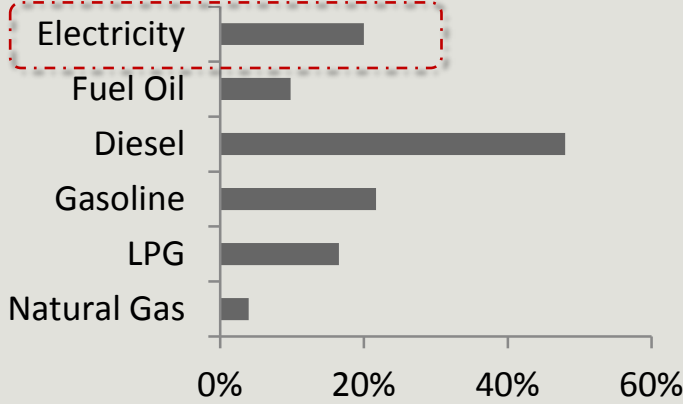


**Evolution of electricity subsidies over the next 5 years (EGPbn)**

	WITHOUT REFORMS	WITH REFORMS
14/15	27	38
15/16	20	41
16/17	13	43
17/18	4	45
18/19	0	47

Source: EGYPTERA

**Breakdown of subsidy bill by products**



Full removal of electricity subsidies in 5 years

Source: Ministry of Petroleum



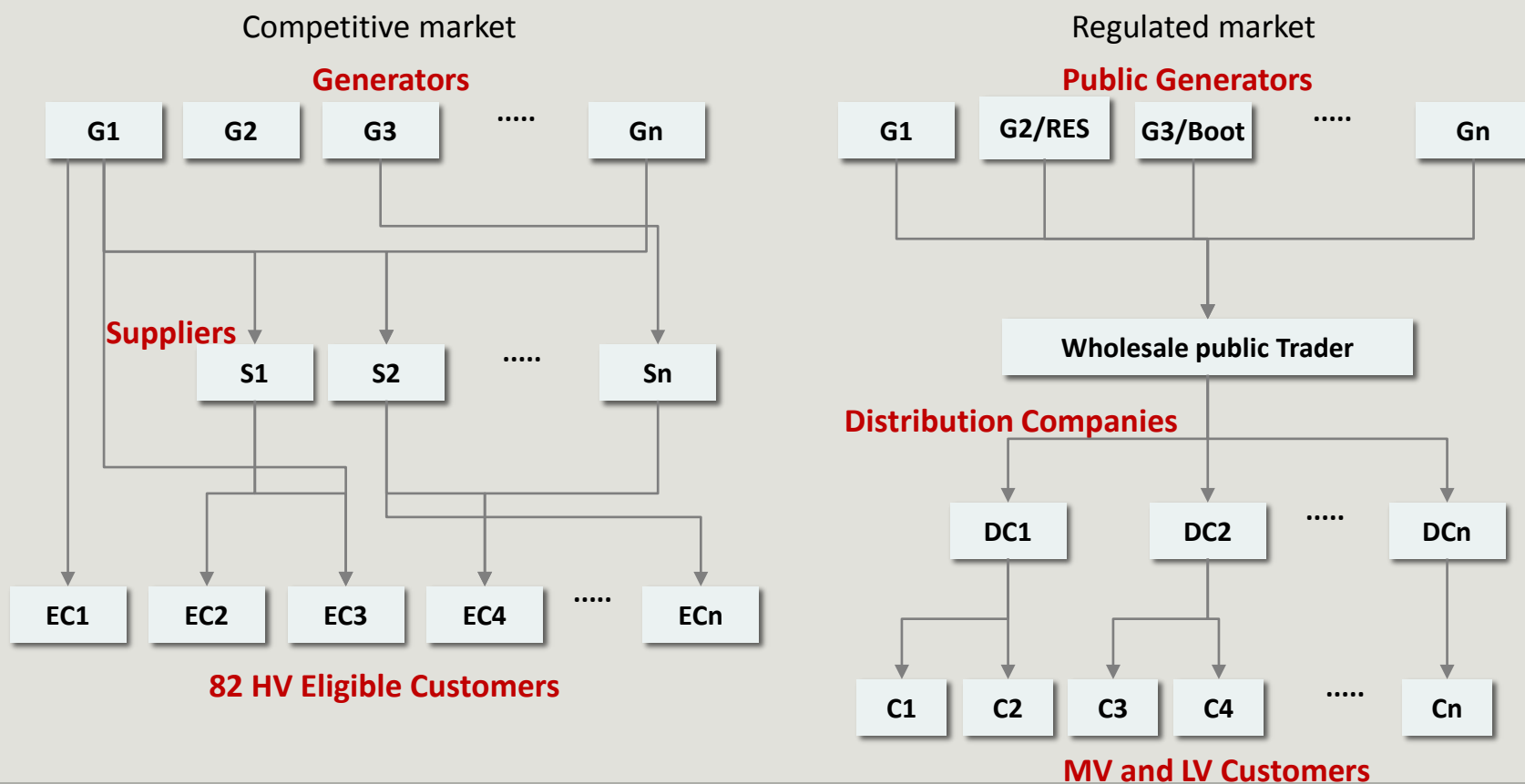
# Challenge #3: Improve institutional framework to unleash the sector's potential

Challenge	Comments
<b>Need to modernize regulatory framework</b>	<ul style="list-style-type: none"><li>■ Lack of wholesale competition for electricity</li><li>■ Absence of independent transmission companies with third party access</li><li>■ Strengthen the electricity regulator in terms of licensing, designing tariffs, providing a separate dispute resolution mechanism, and developing a competitive market design and structure</li><li>■ No clear institutional champion for energy efficiency</li></ul>
<b>Corporate governance</b>	<ul style="list-style-type: none"><li>■ SOEs do not have a sufficient commercial orientation</li><li>■ Scope to increase financial transparency and public accountability</li></ul>
<b>Complex procedures for private sector</b>	<ul style="list-style-type: none"><li>■ Multiple institutional windows</li><li>■ Lack of standardized processes and contracts for IPP</li></ul>

# Challenge #3: Improve institutional framework to unleash the sector's potential (cont.)

**Egypt will create a two-tiered electricity market** First tier of the market will be **competitive** and will comprise high voltage customers (HV), who will freely choose electricity generator suppliers based on a bilateral contract and negotiated electricity prices. The second tier of the market will pay a **regulated** tariff and will purchase electricity from the distribution companies who will be supplied by a single Wholesale Public Trader.

## New structure of Egypt's electricity market





---

## **II. GOVERNMENT'S VISION & ACTIONS**

# The Government's action plan is based on three main pillars...

<b>Security</b>	<ul style="list-style-type: none"><li>■ A diversified energy supply that can reliably meet the energy demands of a growing economy, and takes full advantage of domestic energy resources</li></ul>
<b>Sustainability</b>	<ul style="list-style-type: none"><li>■ An energy sector that is both financially and socially sustainable: (i) financially self-sustaining with clear incentives for private investment; and (ii) preserves affordability for households and competitiveness for business</li></ul>
<b>Governance</b>	<ul style="list-style-type: none"><li>■ Roles of all public and private actors clearly defined and mutually complementary, and all institutions held accountable for performance</li></ul>

# ... and 10 areas of actions

## Security

1

**Boost energy supply**

2

**Diversify energy supply**

3

**Improve energy efficiency**

## Sustainability

4

**Address historic debts**

5

**Reform energy subsidies**

6

**Mitigate social impacts**

## Governance

7

**Enhance energy sector functions**

8

**Modernize sector governance**

9

**Strengthen corporate governance**

10

**Promote private sector investment**



---

## **II. GOVERNMENT'S VISION & ACTIONS**

### **A. Energy security**

# Key Action Areas – Security

1

Action area	Policy Measures	Key Elements	Time Frame			Lead Institutions
			BY 3/2015	BY 3/ 2016	2016-2019	
BOOST ENERGY SUPPLY	EXPAND POWER GENERATION & TRANSMISSION CAPACITY	■ Award contracts for upgrade transmission and distribution networks				EETC/DISCOS
		■ Award contracts for new generation capacity by 2022 (54 GW)				EEHC/EETC
	SECURE NEW LNG IMPORT CONTRACTS	■ Sign agreements for port, FSRU, pipeline and LNG shipments				EGAS

# Key Action Areas – Security

2

Action area	Policy Measures	Key Elements	Time Frame			Lead Institutions
			BY 3/2015	BY 3/ 2016	2016-2019	
DIVERSIFY ENERGY SUPPLY	DIVERSIFY ENERGY MIX	■ Award contracts for <b>12.5 GW</b> of coal-fired power generation				EEHC
		■ Award contracts for <b>4GW</b> of nuclear power generation				EEHC & NUCLEAR?
		■ Award contracts to expand renewable energy capacity to 25% by 2022				EETC/NREA
	STRENGTHEN REGIONAL ENERGY TRADE	■ <b>3GW</b> interconnector with Saudi Arabia				EETC



# Key Action Areas – Security

3

Action area	Policy Measures	Key Elements	Time Frame			Lead Institutions
			BY 3/2015	BY 3/2016	2016-2019	
IMPROVE ENERGY EFFICIENCY	IMPROVE SUPPLY SIDE EFFICIENCY	■ Conversion of open cycle gas plant to combined cycle				EEHC
		■ Adopt measures to reduce T&D losses from <b>12% to 8%</b>				EETC & DISCOS
	IMPROVE DEMAND SIDE EFFICIENCY	■ Publish a 5 year energy efficiency plan with targets				CAB, SEC
		■ Adopt efficiency programs for energy intensive industry				SEC (MoI, MoP, MoERE)
		■ Enforce appliance efficiency standards and building codes				MoI, MoH
		■ Introduce appropriate incentives for energy efficiency finance				CAB
		■ Conduct awareness raising campaign				CAB, EEHC, EGPC

# Key Action Areas – Security

3

Action area	Policy Measures	Key Elements	Time Frame			Lead Institutions
			BY 3/2015	BY 3/2016	2016-2019	
IMPROVE ENERGY EFFICIENCY	IMPROVE DEMAND SIDE EFFICIENCY	■ Phase out incandescent bulbs and rollout 10+50 million LED lamps				DISCOS
		■ Approve a plan to rollout smart meters within 5 years				DISCOS



---

## **II. GOVERNMENT'S VISION & ACTIONS**

### **B. Financial sustainability**

# Key Action Areas – Sustainability

4

Action area	Policy Measures	Key Elements	Time Frame			Lead Institutions
			BY 3/2015	BY 3/2016	2016-2019	
ADDRESS HISTORIC DEBTS	RESTORE FINANCIAL BALANCE OF EEHC	■ Restructure EETC debt to NIB				EEHC/EETC & NIB
		■ Develop plan to raise revenue collection				EEHC
		■ Establish ceiling on contingent liabilities				MoF & MoERE
		■ Prepare 5 year plan to clean up historic arrears				MoF & EEHC

# Key Action Areas – Sustainability

5

Action area	Policy Measures	Key Elements	Time Frame			Lead Institutions
			BY 3/2015	BY 3/ 2016	2016-2019	
REFORM ENERGY SUBSIDIES	ADJUST ENERGY PRICES	■ Implement annual price increments for electricity and fuel up to cost recovery				MoP/MoERE & CAB
	IMPROVE SUBSIDY ADMINISTRATION	■ Compensate EGPC on time and in full for subsidized fuel price paid by EEHC				MoF
		■ Introduce mechanism to monitor fiscal reallocation of energy subsidy savings				MoF

# Key Action Areas – Sustainability

6

Action area	Policy Measures	Key Elements	Time Frame			Lead Institutions
			BY 3/2015	BY 3/2016	2016-2019	
MITIGATE SOCIAL IMPACT	INCREASE SOCIAL SPENDING	■ Partially allocate savings from energy subsidy reforms to social sectors				MoF
		■ Improve coverage, targeting and benefits of Social Solidarity Pension				MoSS



---

## **II. GOVERNMENT'S VISION & ACTIONS**

### **C. Governance**

# Key Action Areas – Governance

7

Action area	Policy Measures	Key Elements	Time Frame			Lead Institutions
			BY 3/2015	BY 3/ 2016	2016-2019	
ENHANCE ENERGY SECTOR FUNCTIONS	ENHANCE ENERGY PLANNING	■ Create Energy Planning Entity (EPE)				SEC, MoP, MoERE
		■ Operationalize energy information system				SEC, MoP, MoERE
	ADOPT INTEGRATED SUSTAINABLE ENERGY STRATEGY 2035	■ Energy strategy under preparation with EU support is adopted				SEC/ CAB, MoP, MoERE
	ENHANCE ENERGY EFFICIENCY	■ Transform Energy Efficiency unit into a fully-fledged entity				SEC



# Key Action Areas – Governance

8

Action area	Policy Measures	Key Elements	Time Frame			Lead Institutions
			BY 3/2015	BY 3/2016	2016-2019	
MODERNIZE SECTOR GOVERNANCE	MODERNIZE ELECTRICITY SECTOR GOVERNANCE	■ Develop a transition plan to a competitive wholesale market for HV customers				MoERE & ERA
		■ Separate EETC into an Independent TSO providing third party access to grid				MoERE & ERA
		■ Create Market Operator for transactions settlement				MoERE & ERA
		■ Enhance EGYPTERA tariff design powers				MoERE & ERA

# Key Action Areas – Governance

Action area	Policy Measures	Key Elements	Time Frame			Lead Institutions
			BY 3/2015	BY 3/ 2016	2016-2019	
MODERNIZE SECTOR GOVERNANCE	MODERNIZE ELECTRICITY SECTOR GOVERNANCE	■ <b>Introduce Feed In Tariff regulations</b>				<b>MoERE &amp; ERA</b>
		■ <b>Address constraints on access to land and finance for renewable energy projects</b>				<b>MoERE</b>

# Key Action Areas – Governance

9

Action area	Policy Measures	Key Elements	Time Frame			Lead Institutions
			BY 3/2015	BY 3/2016	2016-2019	
STRENGTHEN CORPORATE GOVERNANCE	ENHANCE CORPORATIZATION OF STATE OWNED ENTERPRISES	■ Introduce International Financial Reporting Systems and business plans for EEHC and their subsidiaries				MoP & MoERE
		■ Develop and Implement institutional and financial strengthening plan for SOEs				MoP & MoERE

# Key Action Areas – Governance

10

Action area	Policy Measures	Key Elements	Time Frame			Lead Institutions
			BY 3/2015	BY 3/2016	2016-2019	
PROMOTE PRIVATE INVESTMENT	DESIGN TRANSPARENT PROCESS FOR SELECTING IPPS	■ Select least cost projects for private investment				EEHC/EETC
		■ Introduce standardized tendering process				EEHC/EETC
		■ Select developers on a competitive basis				EEHC/EETC
		■ Establish a reference price for IPPs				
		■ Benchmark any directly negotiated projects				EEHC/EETC
		■ Develop model contracts for IPPs				EEHC/EETC
		■ Create a single agency focal point for IPPs				EEHC/EETC
		■ Facilitate third party guarantees				MoF



---

### **III. QUANTIFYING INVESTMENTS NEEDS AND WAY FORWARD**

# The plan will require over US\$ 70bn of investments through 2022

## Power sector (US\$bn)

TOTAL	70.7
OF WHICH, LIKELY PUBLIC	45.7
OF WHICH, LIKELY PRIVATE	25

## Types of expected instruments

LIKELY PUBLIC	<ul style="list-style-type: none"> <li>■ Power generation projects (coal, oil, gas, renewables)</li> <li>■ Efficiency upgrades to existing thermal generation Power transmission infrastructure</li> <li>■ Power transmission infrastructure</li> <li>■ Demand-side energy efficiency</li> </ul>
LIKELY PRIVATE	<ul style="list-style-type: none"> <li>■ Power generation projects (coal, oil, gas, renewables)</li> <li>■ Energy efficiency in industries</li> </ul>

# The government has already implemented key steps to move forward with our energy strategy

## Actions already undertaken

BY CABINET/ SUPREME ENERGY COUNCIL	<ul style="list-style-type: none"><li>■ Create Energy Planning Entity to implement National Strategy</li><li>■ Enact Renewable Energy Law with feed-in-tariffs and Electricity Law to strengthen the regulator, set a reference tariff for electricity purchase and gradually establish a liberalized market</li></ul>
AT MINISTERIAL LEVEL	<ul style="list-style-type: none"><li>■ Improve timeliness and administration of subsidy payments</li><li>■ Standardize tender documents for new capacity</li><li>■ Approve standard format for Power Purchase Agreement and Fuel Supply Agreement (for coal and gas)</li><li>■ Launch RFP for wind and solar projects</li></ul>
AT LEVEL OF STATE OWNED ENTERPRISES	<ul style="list-style-type: none"><li>■ Make arrangements for increasing LNG imports</li><li>■ Ensure 5000 MW of additional power to come on stream in 2015</li></ul>

# Key actions will be implemented over the next 12 months...

By 3/2016

BY CABINET/ SUPREME ENERGY COUNCIL	<ul style="list-style-type: none"><li>■ Publish a 5 year energy efficiency plan with targets and agenda</li><li>■ Transform Energy Efficiency unit into a fully-fledged entity</li><li>■ Regular bi monthly meeting of Cabinet Sub Committee on Action Plan</li><li>■ Restructure EETC debt to NIB</li><li>■ Adopt National Energy Strategy till 2035</li></ul>
AT MINISTERIAL LEVEL	<ul style="list-style-type: none"><li>■ Prepare 5 year plan to clean-up historic arrears of EEGPC and EEHC</li><li>■ Adjust energy prices toward cost recovery levels</li><li>■ Establish energy efficiency and clean funds to ease IPP financing and guarantees</li><li>■ Increase quantity and improve quality of social sector spending</li><li>■ Introduce wholesale competition, independent TSO, FIT regulations based on new Electricity Law</li><li>■ Develop and approve institutional strengthening plan for SOEs</li></ul>
AT LEVEL OF STATE OWNED ENTERPRISES	<ul style="list-style-type: none"><li>■ Award contracts of investment in expanded energy infrastructure</li><li>■ Award contracts for improvement in efficiency of energy infrastructure</li><li>■ Restructure EETC debt to NIB</li><li>■ Introduced streamlined procedures for selecting IPPs</li></ul>



# ...and in the middle-term

2016-2019

BY CABINET/ SUPREME ENERGY COUNCIL	<ul style="list-style-type: none"><li>■ Regular monitoring by Cabinet Sub Committee on Action Plan</li></ul>
AT MINISTERIAL LEVEL	<ul style="list-style-type: none"><li>■ Implement a 5 year plan to clean-up historic arrears of EEGPC and EEHC</li><li>■ Introduce gas regulator and Transco based on new Gas Law</li><li>■ Facilitate third party guarantees for IPPs</li><li>■ Introduce commercial contracts between SOEs and with subsidiaries</li></ul>
AT LEVEL OF STATE OWNED ENTERPRISES	<ul style="list-style-type: none"><li>■ Implement institutional and financial strengthening plan for SOEs, including performance improvement plan</li><li>■ Introduce international financial reporting standards for all SOEs</li></ul>

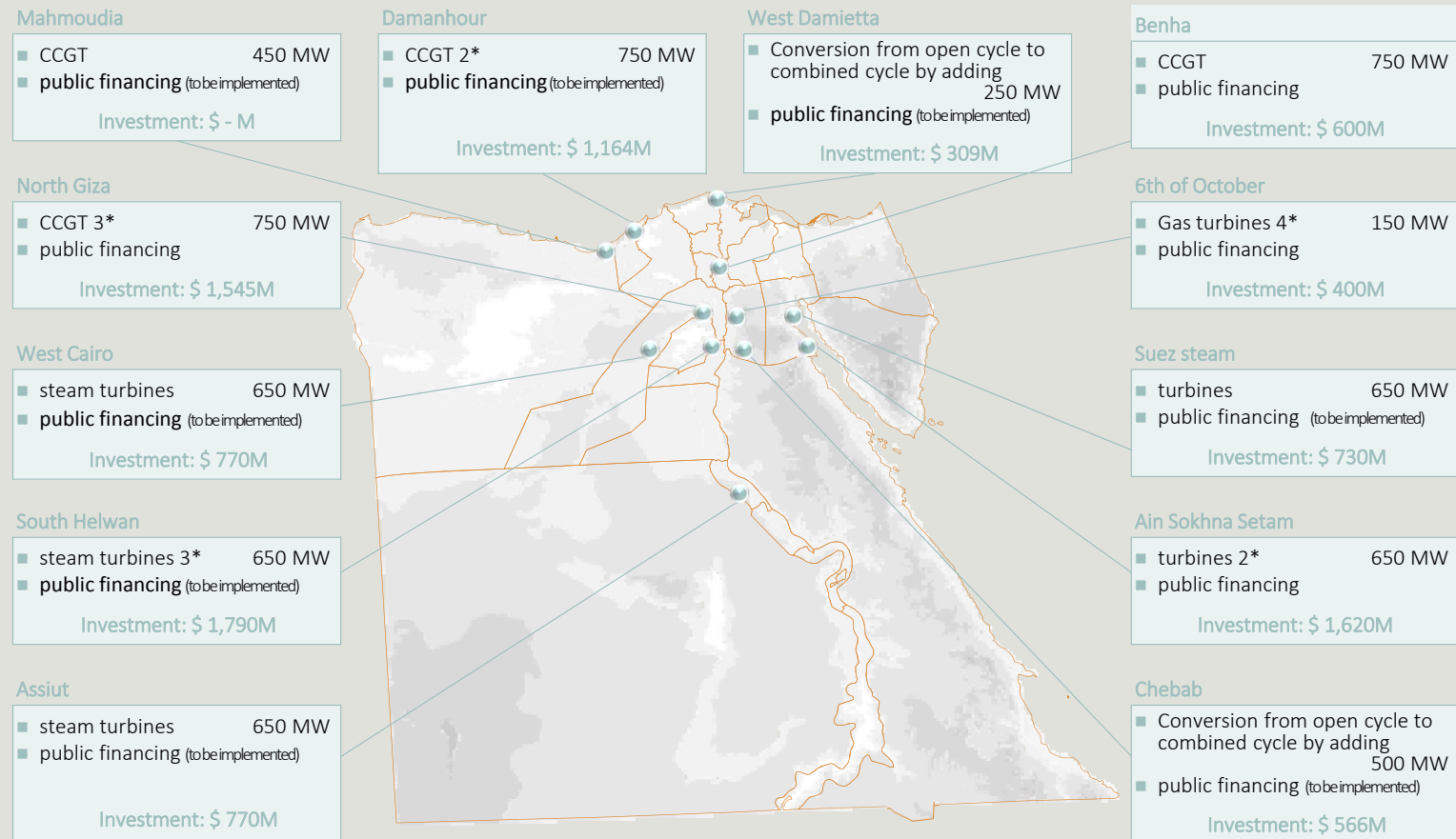


---

## **IV. OVERVIEW OF PROJECTS & INVESTMENT OPPORTUNITIES**

# We have already secured financing for key projects over the past year

TBC



Source: Ministry of Electricity & Renewable Energy

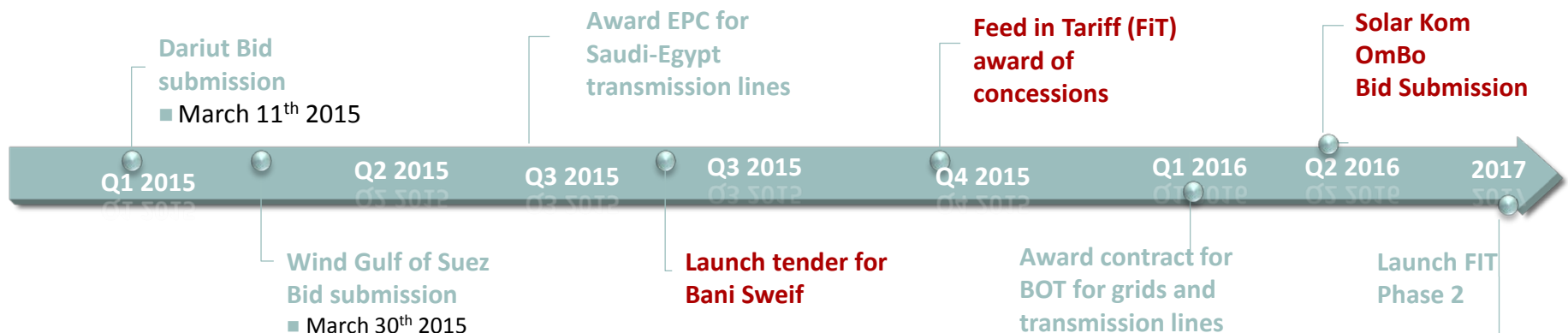
# Reforms and investments will generate further project opportunities for the private sector

## Snapshot of investment opportunities and tenders

Projects in need of financing (either BOT or EPC + finance financial structure)

- **Dairut Combined Cycle Power Plant 2250 MW (BOO) / Bani Sweif Combined Cycle Power Plant 2250 MW (BOO)**
- **KomOmbo Solar farm / Wind Farms Suez Canal (BOO)**
- **Qena steam turbines 2\*650 MW – 1150 MUSD**
- **El Siouf CCGT 750 MW – 644 MUSD (an MOU has been signed in China)**
- **3.96GW Coal Power Plant developed with Al Nowais group (MOU signed)**
- **2GW Coal Power Plant developed with Orascom MOU signed) / Orascom coal plant MOU signed)/ AQWA/Masdar (gas/coal plant) MOU signed)**

## Timeline of tenders and other potential investment opportunities not yet mature





---

**WHAT DO WE NEED TO DO  
TOGETHER TO MOVE  
FORWARD ?**





THANK YOU

