



**MINISTRY OF ENERGY AND
NATURAL RESOURCES OF
THE REPUBLIC OF ARMENIA**

SUSTAINABLE ENERGY

MINISTRY OF ENERGY INFRASTRUCTURES AND NATURAL RESOURCES

OUTLINE

SECTOR OVERVIEW

FOREIGN TRADE RELATIONS

RENEWABLE ENERGY

WHY ARMENIA?



SUSTAINABLE ENERGY

SECTOR OVERVIEW



SUSTAINABLE ENERGY

PILLARS OF THE ENERGY SECURITY STRATEGY OF ARMENIA

Realization
of the
economically
viable renewable
energy
potential

Enabling
energy
efficiency in
the energy
sector

Diversification
of fuel supply
and regional
integration

Safe
operation
of the existing
nuclear units and
a construction
of new
units

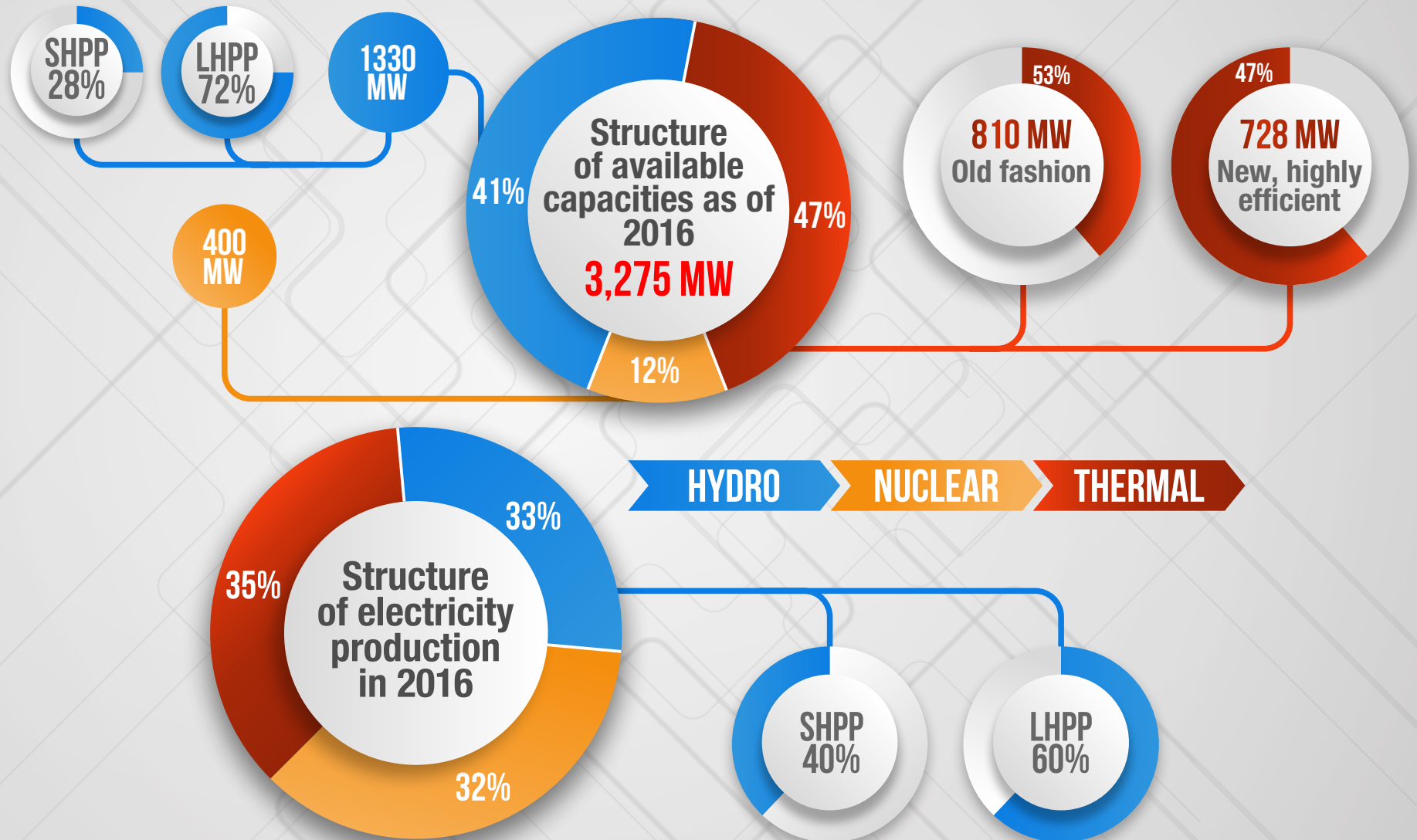
ENERGY POLICY OF ARMENIA

SECTOR OVERVIEW



SUSTAINABLE ENERGY

ARMENIA IS A COUNTRY WITH DIVERSIFIED ENERGY MIX

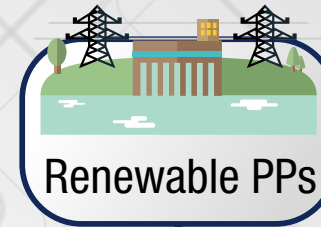
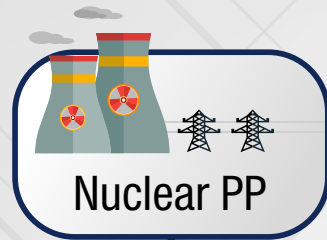


SECTOR OVERVIEW



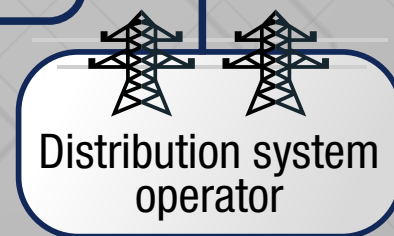
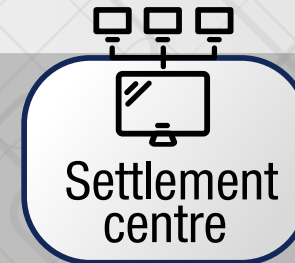
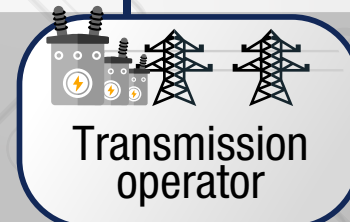
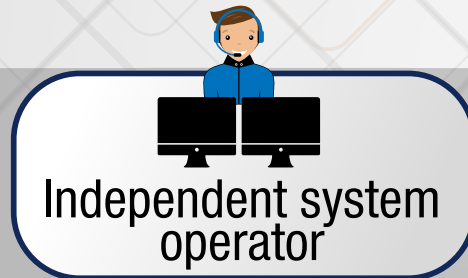
MINISTRY OF ENERGY
INFRASTRUCTURES AND
NATURAL RESOURCES OF
THE REPUBLIC OF ARMENIA
*Policy maker

STRUCTURE OF ARMENIAN POWER MARKET



PUBLIC SERVICES
REGULATORY
COMMISSION
(PSRC)

* Regulates tariffs,
service quality
and licensing



Single buyer market

SECTOR OVERVIEW



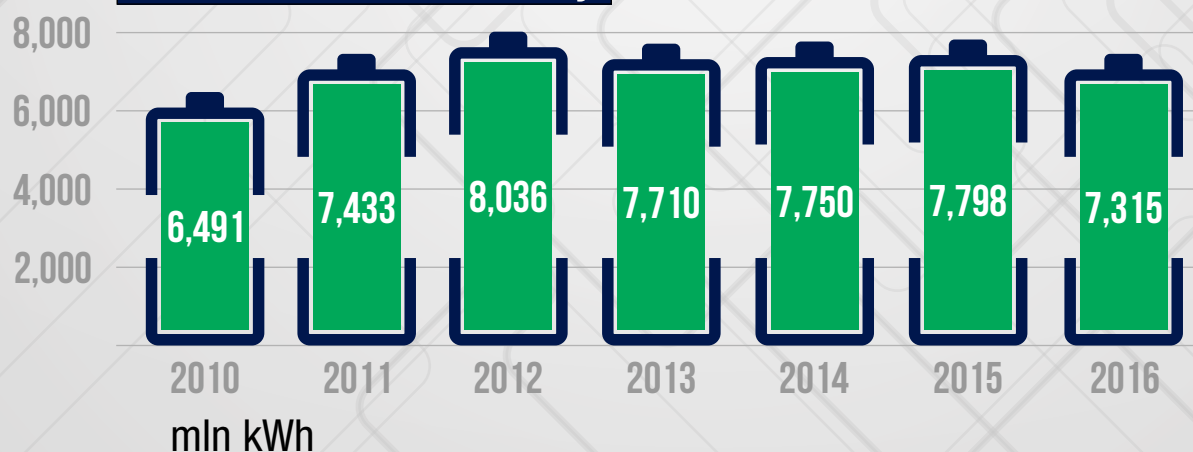
SUSTAINABLE ENERGY

THE SECTOR IN NUMBERS

Output of the sector



Production of electricity



Real
growth
88%
2010 VS 2016

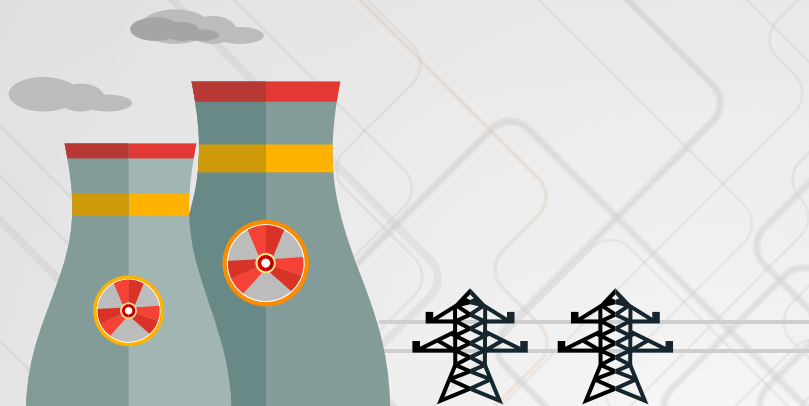
Real
growth
>13%
2010 VS 2016

SECTOR OVERVIEW



SUSTAINABLE ENERGY

MORE THAN 40 YEARS OF EXPERIENCE IN NUCLEAR ENERGY

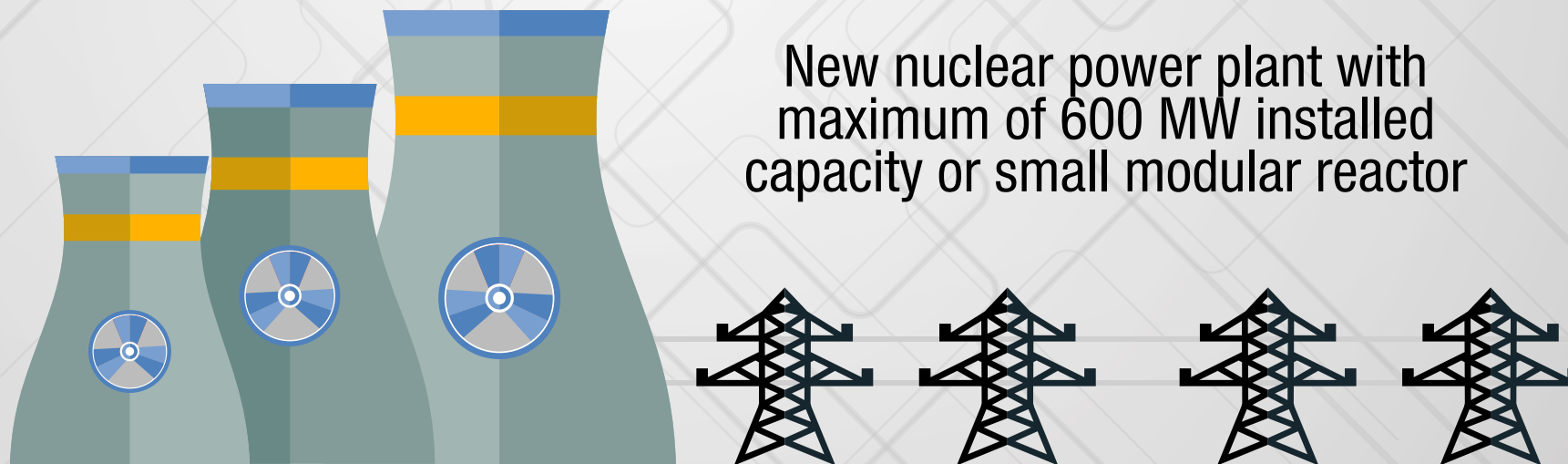


VVER – 440 (V-230)

Investments for upgrading
\$300 mln to prolong the
life cycle until 2026

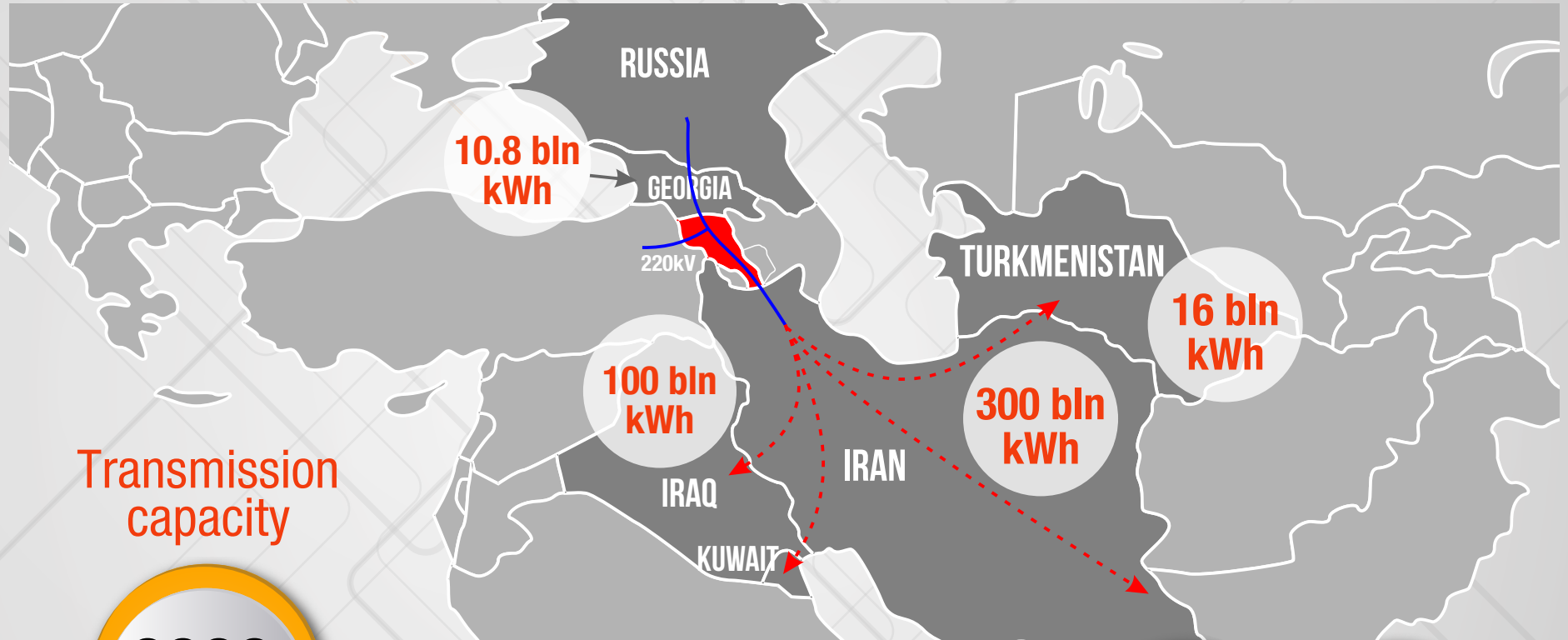
2026

New nuclear power plant with
maximum of 600 MW installed
capacity or small modular reactor



FOREIGN TRADE RELATIONS

ARMENIA HAS DEVELOPED INFRASTRUCTURE TO EXPORT ELECTRICITY



Transmission
capacity

2000
MW

- New 400kV high voltage grid that will increase export 4 times
- Bilateral agreements with Iran and Georgia
- Coming up: common energy markets in EEU



SUSTAINABLE ENERGY



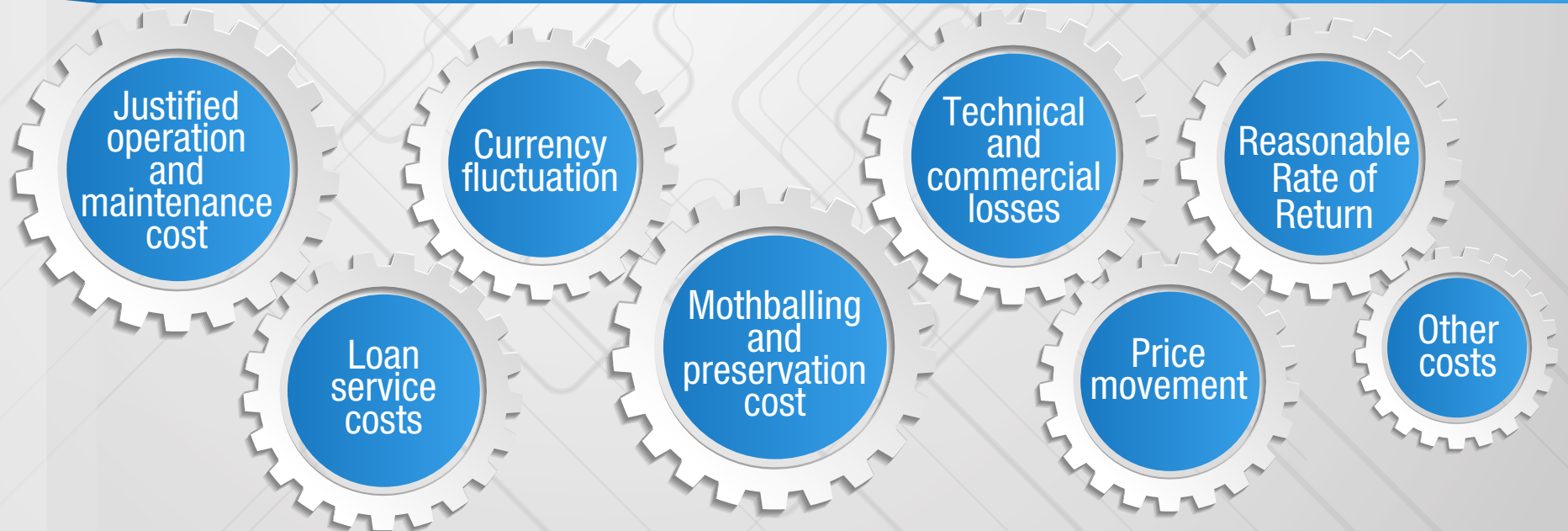
RENEWABLE ENERGY

ENABLING AGGRESSIVE GROWTH FOR RENEWABLE ENERGY

Purchase of all produced electricity is guaranteed by the Law on Energy for 20 years from all renewable plants (15 years for SHPP)

Special Mechanism for Guaranteeing Payments to all Generation Capacities

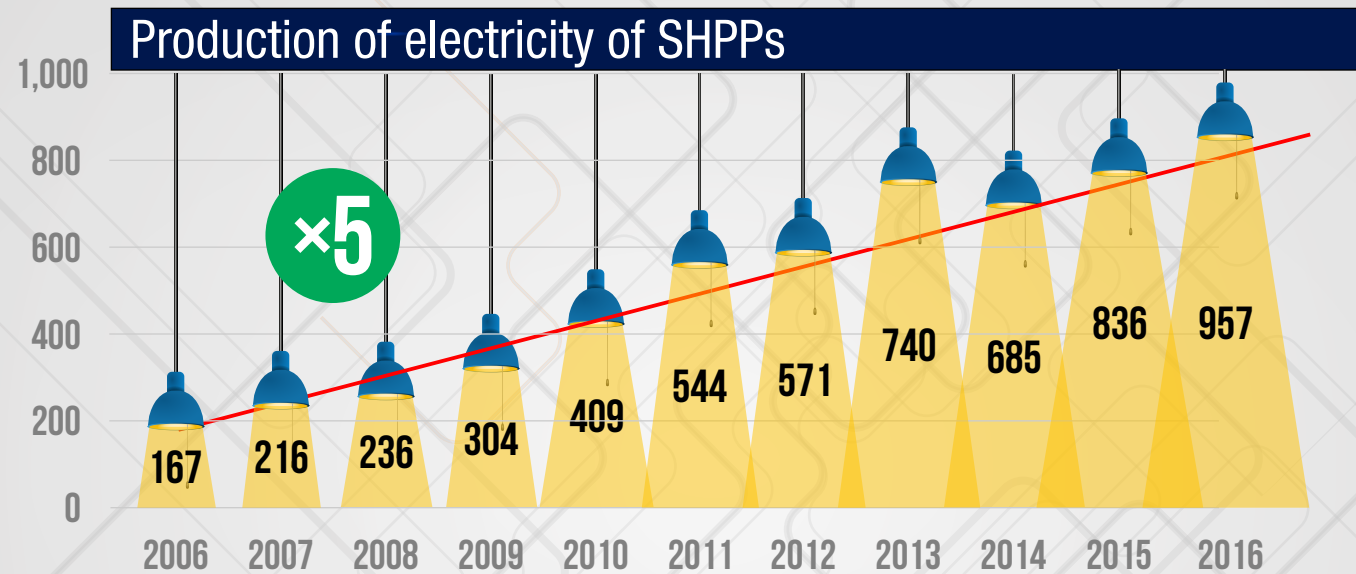
Tariff for renewables are fixed up-front and cover main economic risks



SUSTAINABLE ENERGY

RENEWABLE ENERGY

SUCCESS STORY OF SMALL HYDRO POWER SECTOR



×10
OF NUMBER
OF SHPPS

During last
10 years

All 178 SHPPs,
without an exception,
were built by private
investors

Estimated \$310 mln
of investments,
including FDI

There is still
potential for
growth



SUSTAINABLE ENERGY

RENEWABLE ENERGY



SUSTAINABLE ENERGY

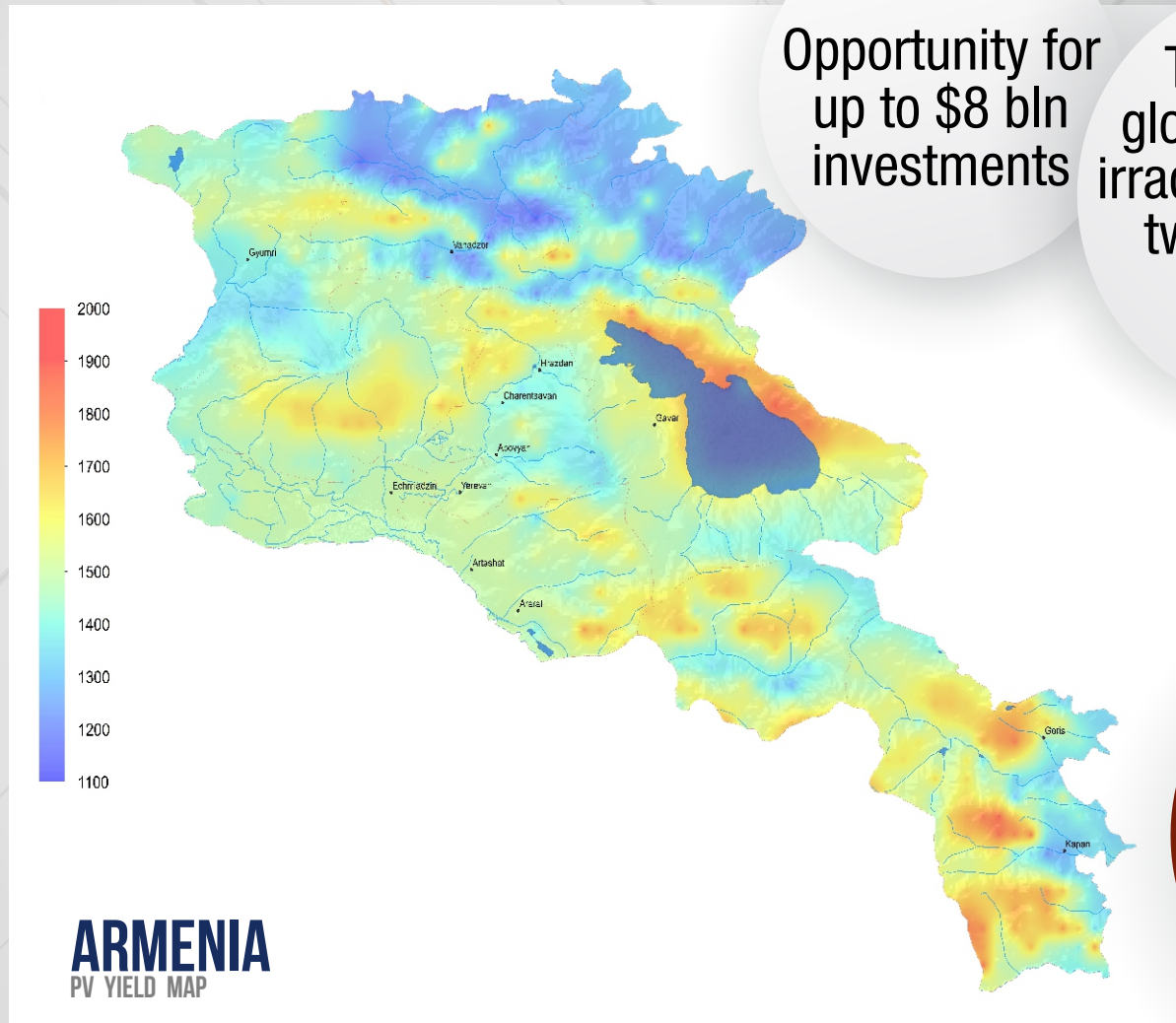
OPPORTUNITIES IN SOLAR PV

Opportunity for
up to \$8 bln
investments

The average
global horizontal
irradiation is about
twice than the
average in
Europe

First
international
bidding for the 50MW
solar PV plant is to
take place
early 2017

**Total
capacity
6.000 MW**

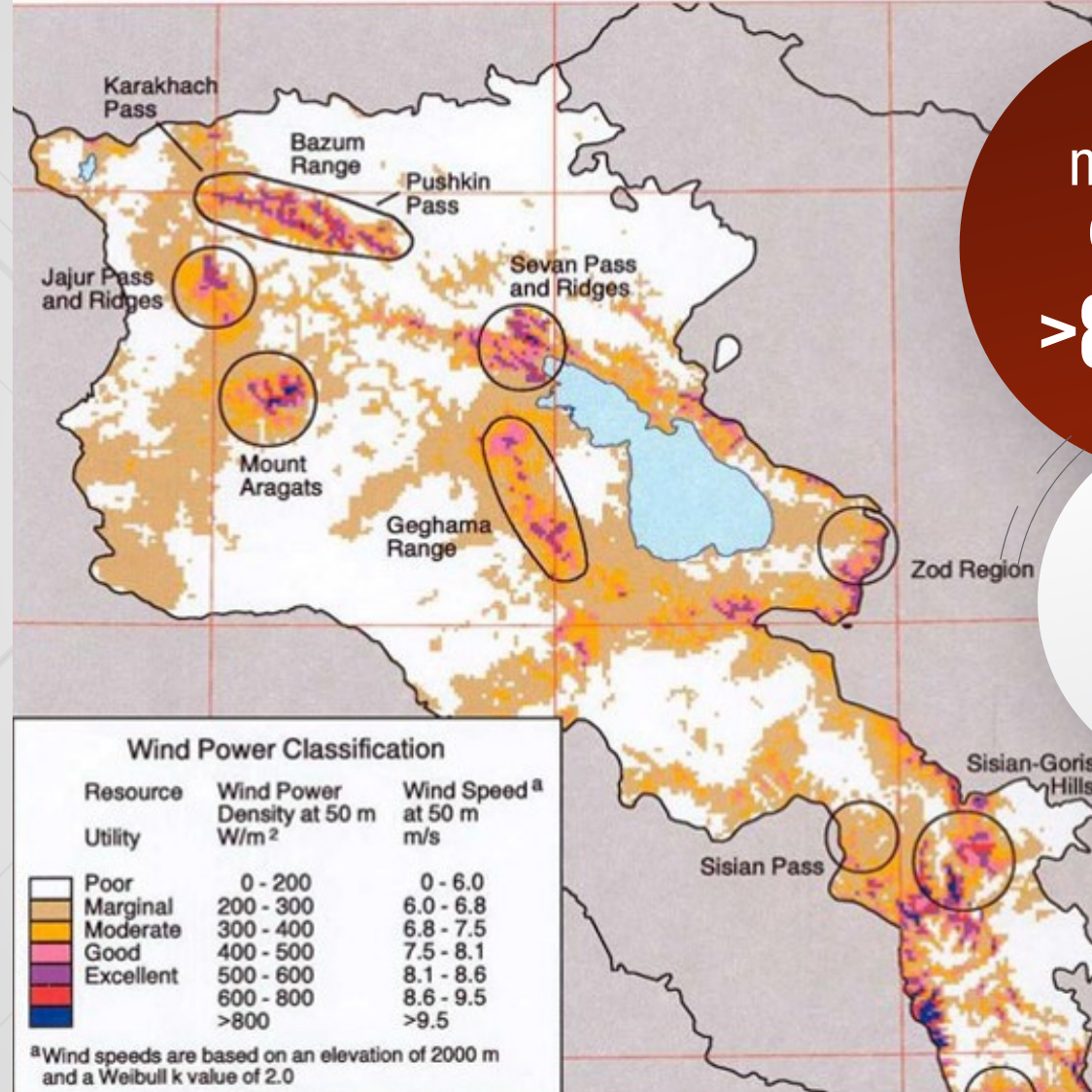


RENEWABLE ENERGY



SUSTAINABLE ENERGY

OPPORTUNITIES IN WIND ENERGY



Total measured capacity
>800 MW

Opportunity for up to \$1.2 bln investments

2 pilot projects are already implemented, while multiple projects are in the pipeline

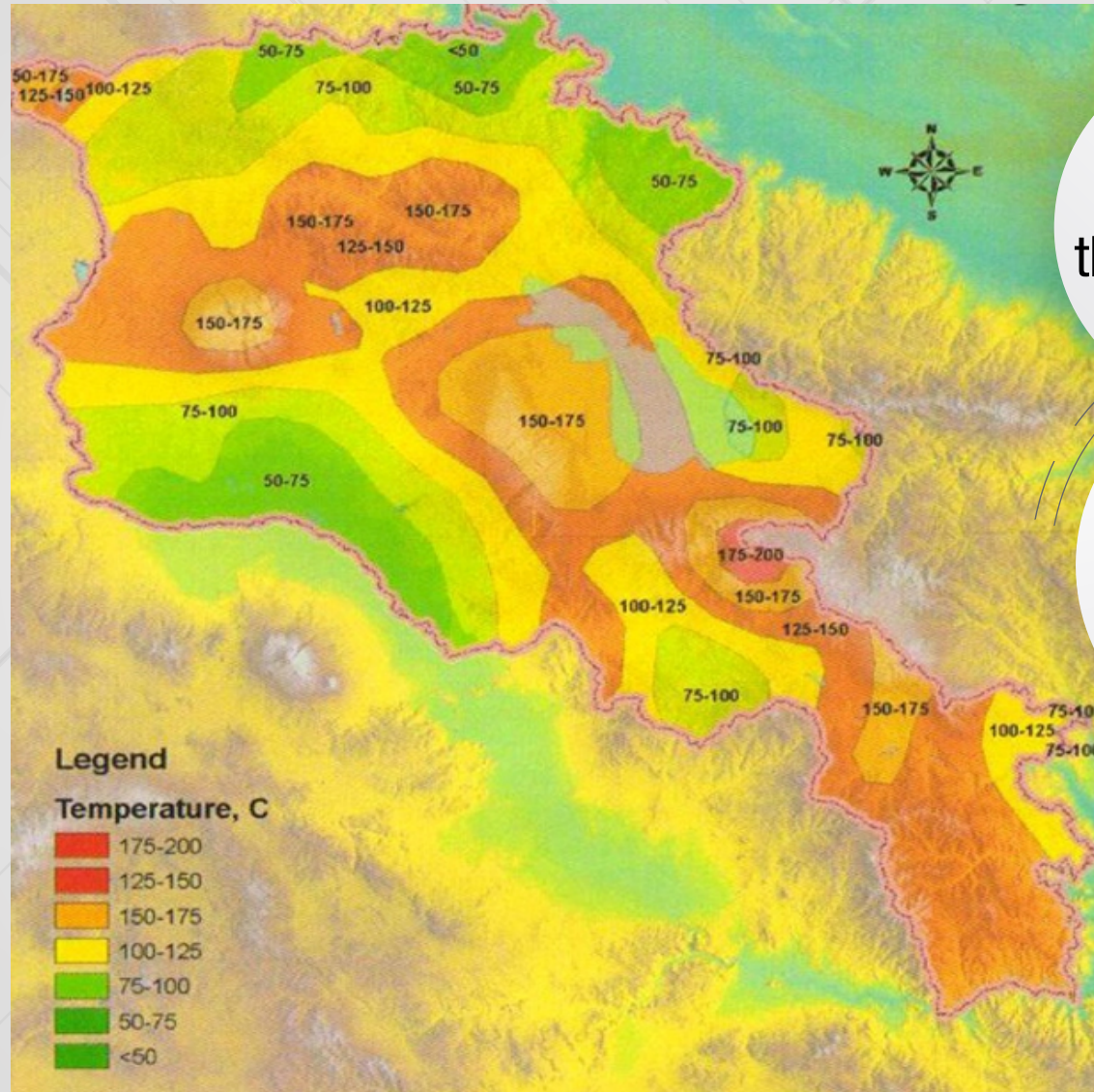
Target 2020:
200 MW
wind parks

RENEWABLE ENERGY



SUSTAINABLE ENERGY

OPPORTUNITIES IN GEOTHERMAL ENERGY



First pilot project is in the exploratory drilling stage

International bidding for the construction rights is planned for 2018

Opportunity for up to \$100 mln investments

Additional 3 sites with high potential are identified

Total estimated capacity for the first site
30 MW

WHY ARMENIA ?



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