



ROSATOM

STATE ATOMIC ENERGY CORPORATION "ROSATOM"

ROSATOM's progress on the global conventional and renewable power generation market

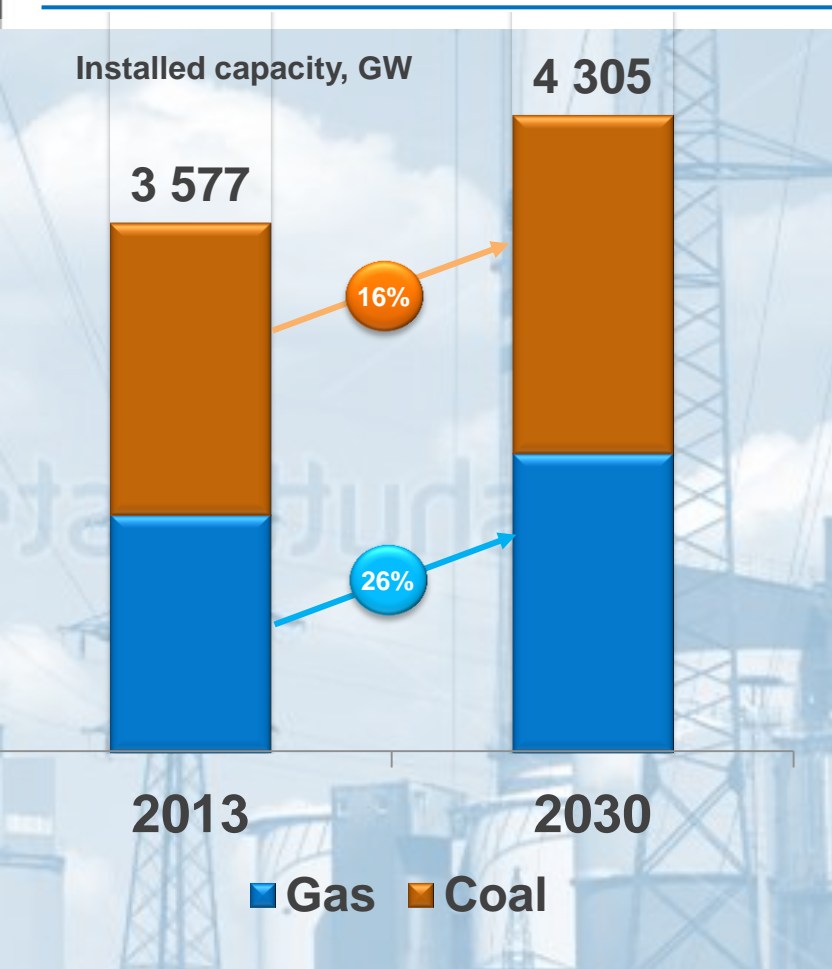
"Atomex-Europe 2013" Forum

***Boris Arseev
Executive Vice-President
Rusatom Overseas, CJSC***

**October 8-9, 2013
Brno, Czech Republic**

GLOBAL MARKET TRENDS

Thermal generation market growth by 2030
≈ 20% or 45.5 GW per year



Background for ROSATOM's entry into the global market of conventional power generation

1

• The companies within ROSATOM'S family possess the necessary competences (engineering and manufacturing capacities)

2

• The global market requires for global players capable of presenting integrated proposals

3

• The international trend is the consolidation and globalization of companies. Small businesses with mono-competences are taken over by large companies.

4

• ROSATOM is actively expanding its foreign market representation through establishment of RAOS marketing offices chain

5

• ROSATOM is already presented in the world with its NPPs. The atomic component is the driver for non-nuclear business development

6

• The volume of the non-nuclear business actually matches the industrial business, but in comparison with the latter the non-nuclear business has shorter cycles of capital turnover.

ROSATOM's COMPETENCES IN THE POWER ENGINEERING

MAIN POWER EQUIPMENT

TURBINE EQUIPMENT

**BOILER EQUIPMENT,
STEAM GENERATORS**

**TANKS AND VESSELS,
METALLURGY**



AUXILIARY POWER EQUIPMENT

VALVES AND PIPING

**WATER TREATMENT
AND COOLING
SYSTEMS**

PUMP EQUIPMENT

**VENTILATION
EQUIPMENT**

ELECTRICAL EQUIPMENT



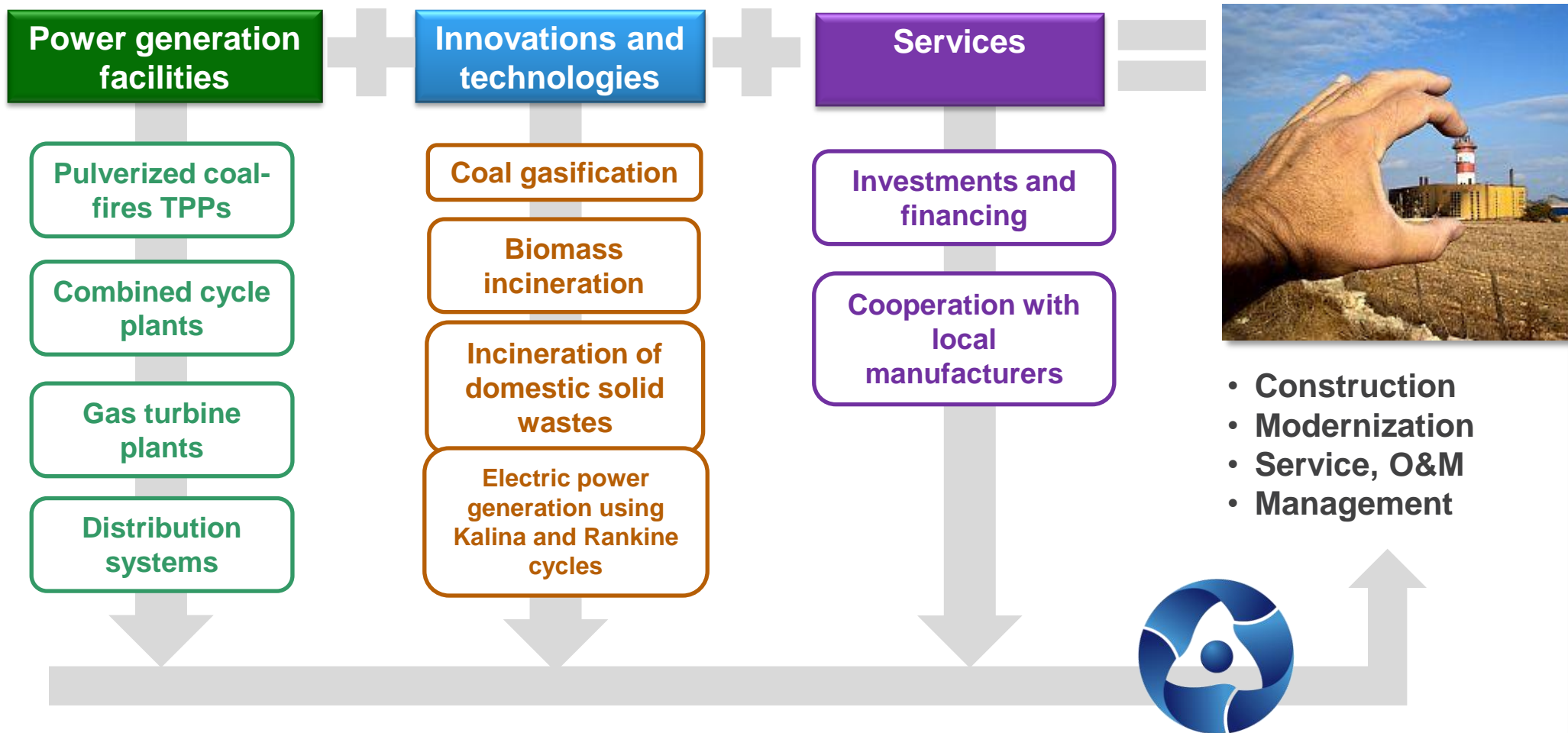
ENGINEERING



CONSTRUCTION AND INSTALLATION



KEY DIRECTION OF ROSATOM's PROGRESS ON THE GLOBAL MARKET OF CONVENTIONAL POWER GENERATION



ROSATOM
OVERSEAS

KEY ROLES OF RAOS ON CONVENTIONAL POWER GENERATION MARKET



SUPPLIER

Production and supply of equipment of Russian manufacturers

Production localization

Integration of new technologies



GENERAL CONTRACTOR

The role of the general contractor, proposal integration

Attraction and selection of suppliers for project implementation

Management of construction and modernization projects



INVESTOR

Attraction of financing - internal funds and outside investments

Build-Own-Operate

(B) Licensing and construction of facilities

(O) Sales of shares, ownership

(O) Facility management, sales of electricity



RAOS OFFERS INTEGRATED SOLUTIONS FOR PROJECT IMPLEMENTATION



The master vector of RAOS progress on the conventional power generation market is the realization of BOO projects (Build—Own—Operate)

Attraction of investments and construction

Financing options:

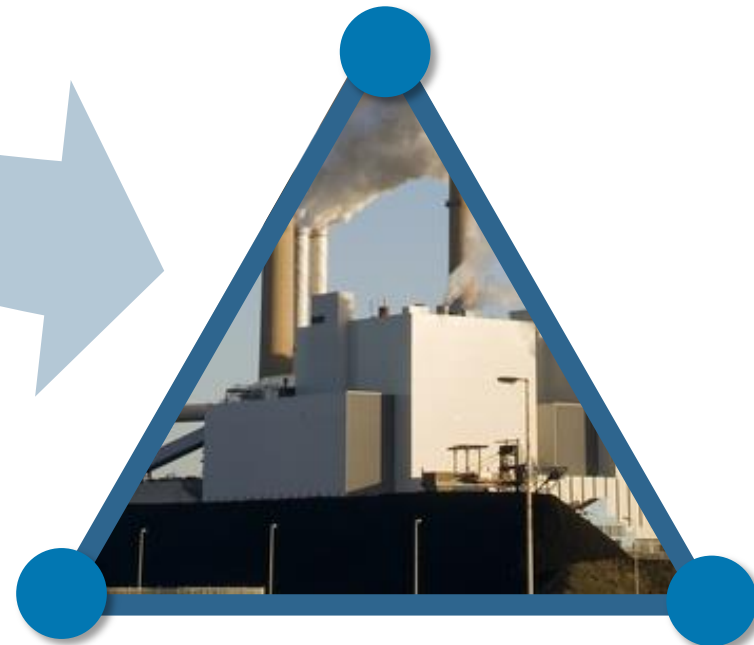
- Interstate financing
- Strategic financing
- Institutional financing
- Fund investment
- Government investments and guarantees



EXAMPLE: Investor – Akkuyu NPP construction (CAPEX – app. \$ 20 bln.)

Sales of shares and ownership

Facility management



GENERAL CONTRACTOR FUNCTIONS ARE INCLUDED IN RAOS's STRATEGY ON CONVENTIONAL POWER GENERATION MARKETS



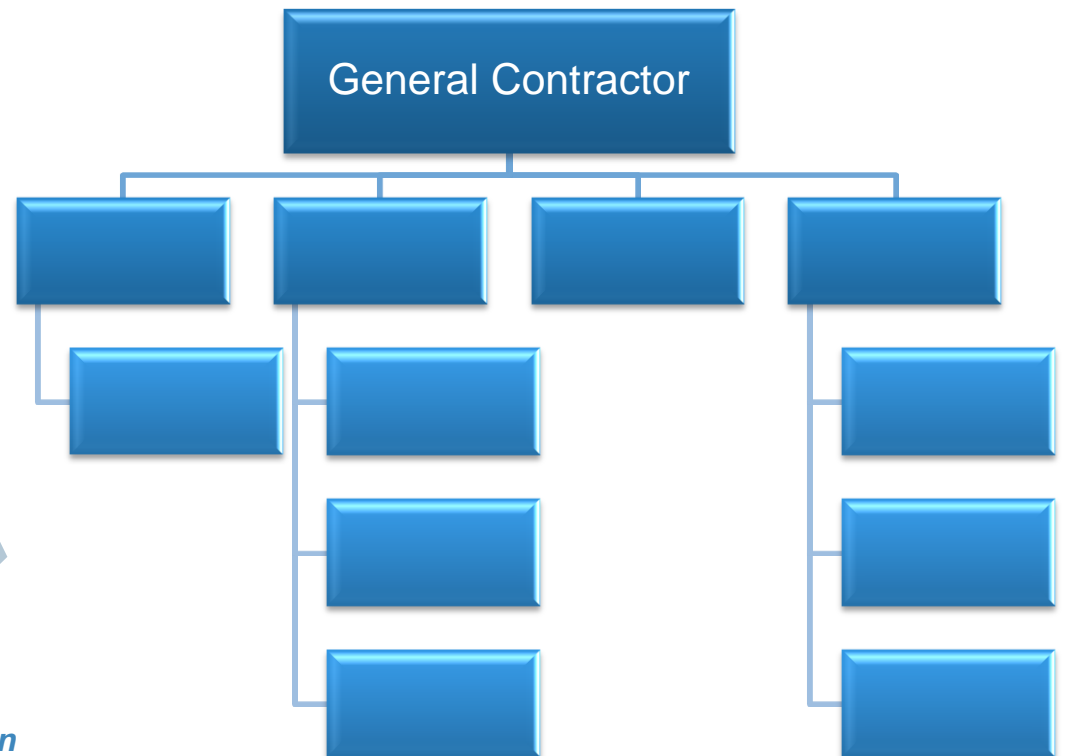
RAOS, as the General Contractor, offers a range of services providing for continuous implementation of projects for construction of power generating facilities

Key functions:

- Performance of all types of work under agreement
- Conclusion of sub-contract agreements and control for their implementation
- Arrangement of construction
- Health, safety and environment policy
- Turnkey based commissioning
- Issuance of as-built documents, etc.



EXAMPLE: General Contractor - Construction of a new unit – combined cycle plant GRES-2 SOUTH-URAL TPP



ROSATOM AS SINGLE-SOURCE SUPPLIER OF A WIDE RANGE OF EQUIPMENT

The integrated offer includes the arrangement of both package supplies and assembly units supplies for new built TPPs



- Production and supply of equipment of Russian manufacturers
- Localization of manufacturing
- International cooperation
- Integration of efficient technologies

EXAMPLE: Supplier - 152 domestic and foreign power plants with general capacity over 66 GW (over 16 GW for export)



RAOS INTEGRATED SOLUTION ON THE WIND POWER MARKET

ROSATOM's integrated offer

Financing

- BOO projects implementation
- Government loans
- Partnership

Infrastructure

- Program and project management
- Attraction of stakeholders

Supplies and technologies

- Equipment manufacturing services
- Work localization
- Technology exchange
- R&D

ROSATOM's manufacturing capacities make it possible to suggest 65% of localization for wind turbine manufacturing

 **ПетрозаводскМаш**



ROSATOM

 **атомэнергомаш**



ВетроОГК
группа компаний Атомэнергомаш



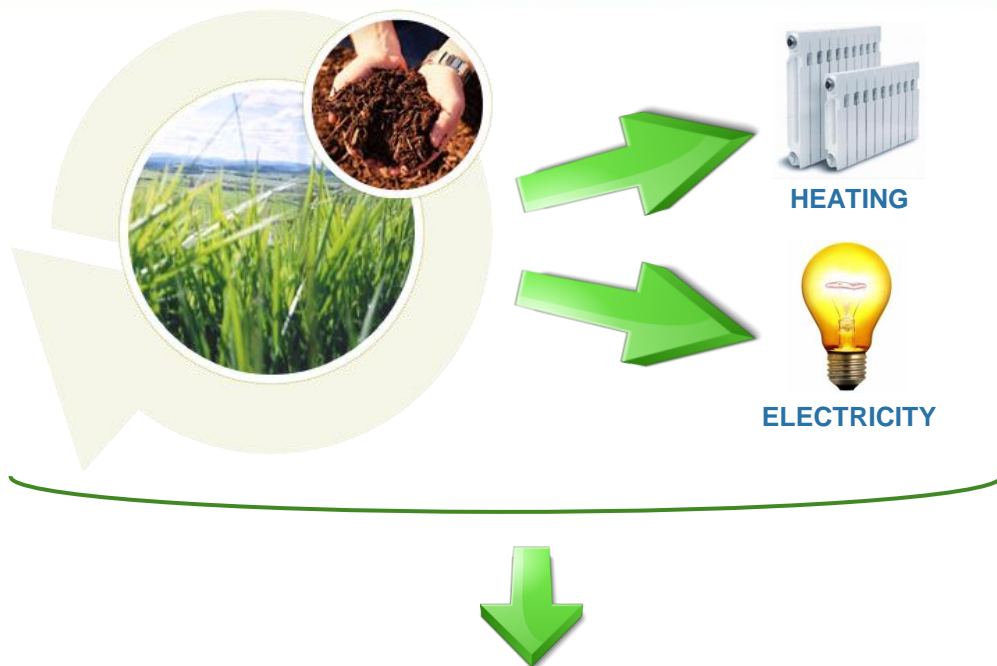
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RAOS INTEGRATED SOLUTION ON BIOMASS INCINERATION



- ENVIRONMENTALLY FRIENDLY;
- SHORT-TERM CONSTRUCTION;
- FAST PAYBACK;
- INCOME FROM ELECTRICITY SUPPLY;
- INCOME FROM HEAT PRODUCTION.

ROSATOM's integrated offer

Financing

- BOO projects implementation
- Government loans
- Partnership

Infrastructure

- Program and project management
- Attraction of stakeholders

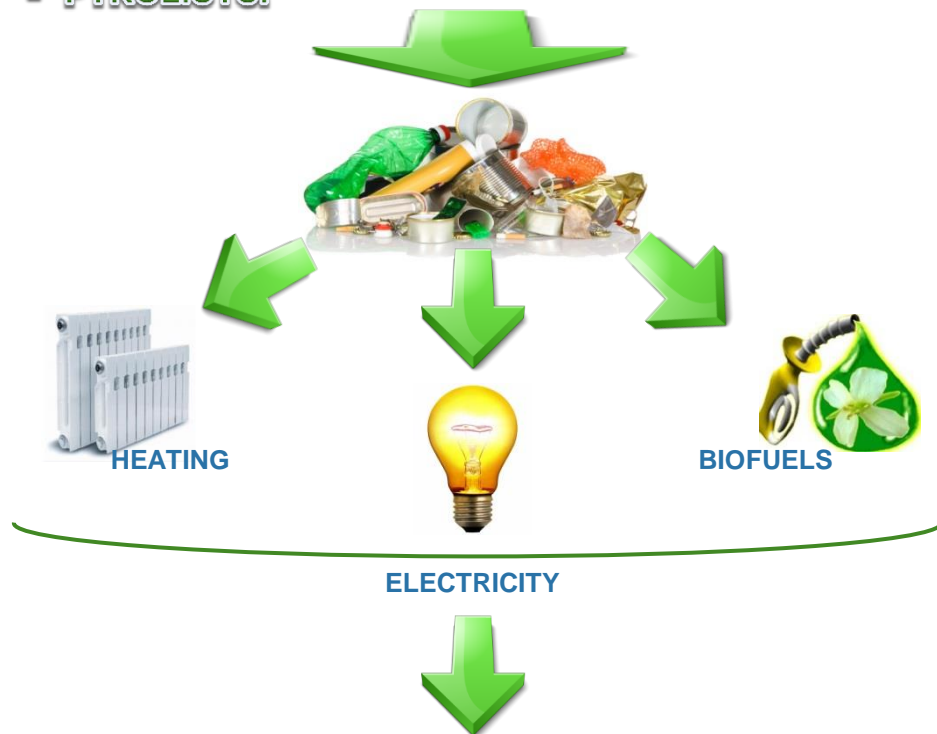
Supplies and technologies

- Equipment manufacturing services
- Work localization
- Technology exchange
- R&D



RAOS INTEGRATED SOLUTION MUNICIPAL SOLID WASTE TREATMENT

- PLASMA GASIFICATION TECHNOLOGY;
- INCINERATION TECHNOLOGY;
- PYROLISYS.



- ENVIRONMENTALLY FRIENDLY (NO EMISSIONS OF GREENHOUSE GASES);
- EFFICIENT SOLUTION FOR THE PROBLEM OF MUNICIPAL SOLID WASTE ACCUMULATION;
- INCOME FROM ELECTRICITY SUPPLY;
- INCOME FROM HEAT PRODUCTION;
- INCOME FROM MUNICIPAL SOLID WASTE UTILIZATION.

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ROSATOM's integrated offer

Financing

- BOO projects implementation
- Government loans
- Partnership

Infrastructure

- Program and project management
- Attraction of stakeholders

Supplies and technologies

- Equipment manufacturing services
- Work localization
- Technology exchange
- R&D



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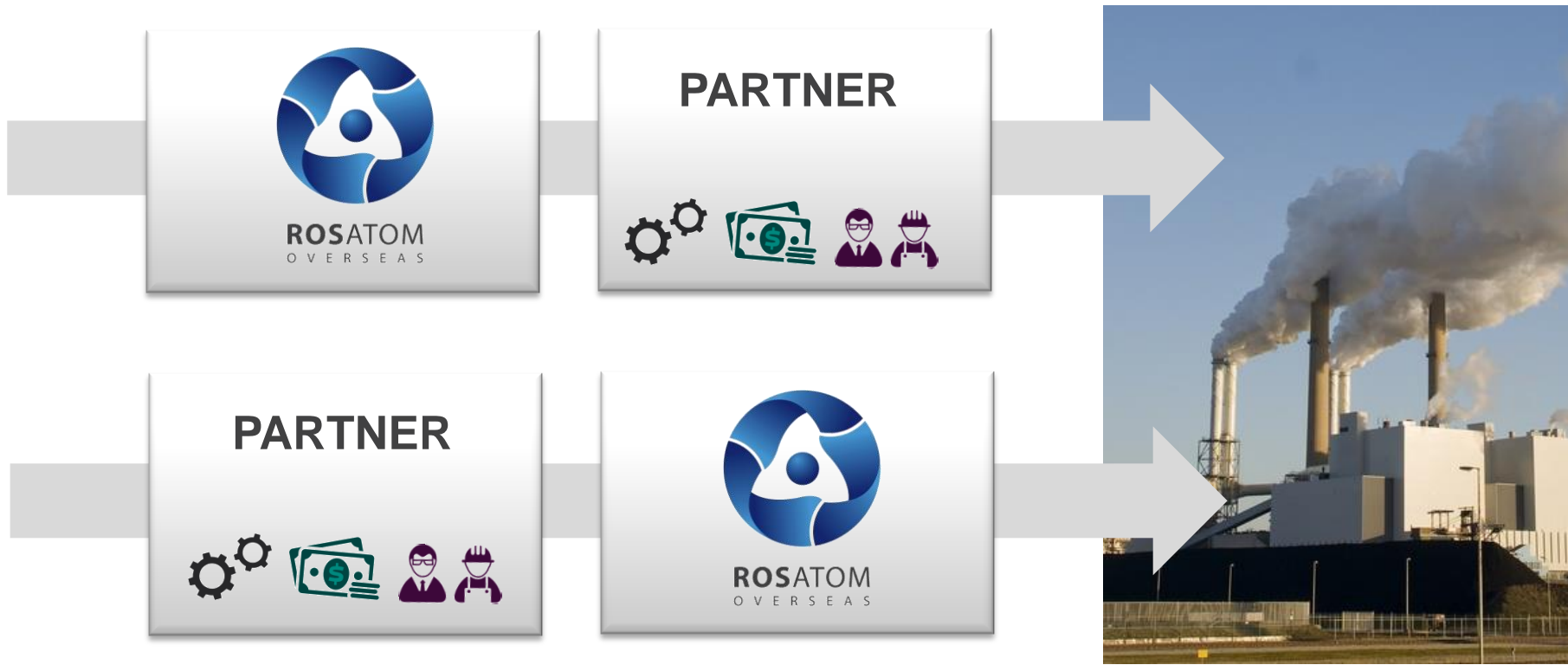
PARTNERSHIP IS THE KEY COMPONENT FOR ROSATOM PROGRESS ON THE GLOBAL MARKET



EFFICIENT COOPERATION FOR EFFICIENT SOLUTIONS

ROSATOM is ready both to participate in its partners' projects and involve the enterprises that offer optimal solutions for conventional power generation in its own projects

PARTNERSHIP FORMS



EXAMPLES OF PROJECTS IN EASTERN AND CENTRAL EUROPE

Conventional power generation

Country: Montenegro

Project: Building of pulverized coal-fired TPP 220 MW

Implementation scheme: building of TPP on BOO basis. Possibility of cooperation with Czech and Slovakian companies is under consideration.



Wind energy

Country: Hungary

Project: building of wind farm 2x16 MW.

Implementation scheme: BOO, sales of electricity to Austria, possibility of cooperation with Czech manufacturing facilities is under consideration.



Innovative technologies

Country: Lithuania

Project: 10-30 MW heat and electricity supply based on biomass incineration technology.

Implementation scheme: building of TPP on BOO basis with a prospective of participation in a wide-scaled program of building biomass TPPs in Lithuania. Possibility of cooperation with manufacturing facilities of Eastern Europe and Itali is under consideration.



Thank You for Attention!

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