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# **RusHydro** Investor presentation

Raiffaisenbank Russia days @ Stockholm, Frankfurt February 7-8, 2018

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# **RusHydro**

I. About the company & key highlights

II. Strategy through 2020 & forward contract with VTB

III. Operating & financial results

IV. Russian power market outlook

# Key figures and facts

			Key fi	gures			
39.1	140	71	>60%	100	19.9	<b>1.2x</b>	61%
<b>GW</b> Installed electric capacity of RusHydro Group <sup>(1)</sup>	<b>TWh</b> Total output of RusHydro Group in 2017 <sup>(1)</sup>	thousand employees	Of Russia's installed hydro capacity controlled by RusHydro Group	<b>RUB bn</b> FY2016 EBITDA	<b>RUB bn</b> Dividends for FY2016 paid in 2017	net debt/ EBITDA <sup>(2)</sup>	Average EBITDA margin of hydropower segment in 2014-2016

- Largest generating company in Russia and one of the largest publicly traded generating company with predominantly hydro assets in the world with installed capacity of 39.1 GW<sup>(1)</sup> (ca.16% of Russia's total installed electric capacity)
- A developing and successful dividend story: 7 consecutive years of increasing dividend payments since 2010; dividend payout in the amount of 50% of net profit in 2016-2017
- Focus on the Russian market: implementation of new construction projects, extension of life-time and improving efficiency of existing assets
- Diversified holding company with hydro and thermal generation assets, alternative renewables, transmission and distribution, retail, R&D and repair assets
- One of the most liquid generating companies of the Russian stock market: local shares included in Level 1 list on MOEX, DRs listed on the LSE and trading on OTCQX in New York, included in MSCI Russia index.
- S Green utility one of the world's largest renewable energy players, a sustainable development leader in Russia

RusHydro

(2) Reflecting expected cancelation of guarantee of Boguchanskaya HPP loan by PJSC RusHydro

# Geography of key assets - benefitting from high diversification



(2) Including 1,200MW of pumped storage capacity

# RusHydro: yesterday and today



# Key highlights and events of 2017

RAO ES subgroup debt	<ul> <li>Capital raise in the amount of RUB 55 bn from VTB Bank</li> <li>Repayment of RUB 55 bn debt of Far Eastern subsidiaries</li> <li>Reduction of net debt/EBITDA to 1.2x<sup>(1)</sup></li> </ul>
Dividend	<ul> <li>Record-high dividend in the amount of RUB 20 bn or 4.66 kopecks per share (up 20% to 2016) with payout of 50% of IFRS net profit – one of the best dividends among Russian utilities</li> </ul>
Operations	<ul> <li>Electricity output in FY2017 – 139.4 TWh<sup>(2)</sup> – a new historical record</li> <li>42.5 MW hydropower capacity uprate due following modernization</li> </ul>
Strategy	<ul> <li>Board of Directors approved RusHydro Group value growth plan through 2021, aimed at increase in the Company fundamental value and market capitalization and preparation of measures, aimed at introduction of long-term tariff regulation in the Far East Federal District</li> </ul>
Investment program	<ul> <li>Commissioning of Yakutskaya GRES-2 (193 MW/ 469 Gcal/h) – second of the 4 priority new construction projects in the Far East</li> <li>Completion of comprehensive restoration of Sayano-Shushensklaya and full commissioning of Boguchanskaya hydropower plants</li> </ul>
Financial policy	<ul> <li>Successful entry into Eurobond market: RusHydro placed RUB 20 bn 5-year RUB-denominated LPNs on the Irish Exchange</li> <li>Cancellation of RusHydro's suretyship of RUB 26 bn in respect of Boguchaskaya HPP loan<sup>(3)</sup>.</li> </ul>
Organizational development	<ul> <li>Completion of 100% consolidation of PJSC RAO ES East</li> <li>Merging HQs of RusHydro and RAO ES East</li> <li>JSC ESC RusHydro took over management of retail function of PJSC DEK in the Far East</li> </ul>
RusHydro	<ol> <li>Reflecting expected cancelation of guarantee on Boguchanskaya HPP loan by PJSC RusHydro</li> <li>Estimated output</li> <li>Actual cancellation of cancellation of suretyship of PISC RusHydro in respect of Boguchanskaya HPP loan expected in the end of 2017-early 2018</li> </ol>

(2) Estimated output
 (3) Actual cancellation of cancellation of suretyship of PJSC RusHydro in respect of Boguchanskaya HPP loan expected in the end of 2017-early 2018

### 2017

- ✓ Commissioning of Yakutskaya TPP-2 (193 MW / 469 Gcal/h).
- ✓ 42.5 MW of installed hydro capacity added due to implementation of modernization program.

### 2018

- Commissioning of combined 1,064 MW of new electric capacity.
- Increase of installed hydro capacity by 63 MW due to implementation of modernization program.



# RusHydro – among top 20 green power generators of the world <sup>(1)</sup>

N⁰	Company	Country	Nuclear,GW	Hydro, GW	Renewables, GW	CO <sub>2</sub> free, GW	CO <sub>2</sub> free/IC
1	Acciona	Spain	0.0	0.9	8.0	8.9	100%
2	China National Nuclear Corp.	China	11.5	0.0	0.0	11.5	100%
3	E.On	Germany	4.2	0.0	4.2	8.4	100%
4	Energoatom	Ukraine	13.8	0.3	0.0	14.1	100%
5	Rosatom	Russia	27.1	0.0	0.0	27.1	100%
6	Hydro-Quebec	Canada	0.0	36.4	0.0	36.4	99%
7	BC Hydro	Canada	0.0	11.9	0.0	11.9	99%
8	Cemig	Brazil	0.0	7.7	0.1	7.7	98%
9	China Three Gorges	China	0.0	58.8	7.8	66.6	96%
10	Eletrobras	Brazil	2.0	40.8	1.0	43.9	95%
11	Verbund	Austria	0.0	8.2	0.4	8.6	89%
12	Statkraft	Norway	0.0	15.8	0.9	16.7	87%
13	China General Nuclear (CGN)	China	20.4	2.3	13.5	36.2	83%
14	Ontario Power Generation	Canada	5.7	7.4	0.0	13.2	81%
15	Ахро	Switzerland	3.1	3.5	0.5	7.1	80%
16	🤪 RusHydro	Russia	0.0	28.8	0.3	29.1	78%
17	EDF	France	75.0	22.8	7.8	105.5	77%
18	Eurosibenergo	Russia	0.0	15.1	0.0	15.1	77%
19	Energias de Portugal (EDP)	Portugal	0.2	8.1	10.1	18.3	73%
20	Exelon	US	19.5	1.6	2.1	23.2	71%







# Progress in key aspects of sustainable development



In September 2017 RusHydro has sent letter of commitment addressed to the UN Secretary General in support of ten principles of the Global Compact with respect to human rights, labour, environment and anti-corruption and joined the UN Global Compact.



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### Corporate governance

#### Key highlights

- The Russian government directly owns 60.6% of RusHydro.
   A special Presidential decree stipulates minimum government's ownership at 60.5%
- RusHydro's shares are listed on the Moscow Exchange and on the London Stock Exchange in the form of ADRs (ticker - HYDR)
- The Board of Directors includes 13 reputable representatives and is headed by Mr. Yuri Trutnev – Deputy Prime Minister and Authorised Representative of the President in the Far Eastern Federal District





2) Independent Directors in accordance with the UK Corporate Governance Code

#### Key highlights

- RusHydro's hydro generation business is represented by a separate segment (PJSC RusHydro), which accounted for c. 82% of total EBITDA in 9M 2017 (segment EBITDA margin 65.7%)
- Retail operations (i.e. resale of electricity purchased in the wholesale electricity market to retail customers) in the European part of Russia and Siberia are consolidated in the ESC RusHydro subgroup, which includes 4 regional retail companies
- In the Far East, the Company operates extensive integrated infrastructure via RAO ES East subgroup:
  - Electricity and heat generation assets
  - More than 100,000 km of electricity grids and about 4,000 km of heating networks
  - Retail business (1 regional retail company)

		— Busines	s segments			
Location	Description		Line of busin	ness		9M 2017 financial results <sup>(1)</sup>
Location	Description	Generation	Transmission	Distribution	Retail	
<ul><li>Europe</li><li>Siberia</li><li>Far East</li></ul>	Hydropower generation	8			-	89.4 58.8
– Europe – Siberia	Electricity retail business	-	_		۲	44.0 1.3
<ul> <li>Far East – electricity market</li> <li>Far East – heat market</li> </ul>	Electricity generation, distribution and retail Heat generation, distribution and retail	<b>8</b> <b>8</b>	Russian Grids (natural monopoly) Not applicable to the heat market	<b>8</b>	<b>8</b> <b>8</b>	9.7 Segment revenue (RUB bn) Segment EBITDA (RUB bn)
	<ul> <li>Siberia</li> <li>Far East</li> <li>Éurope</li> <li>Siberia</li> <li>Far East – electricity market</li> <li>Far East –</li> </ul>	<ul> <li>Europe</li> <li>Siberia</li> <li>Far East</li> <li>Hydropower generation</li> <li>Far East</li> <li>Electricity retail business</li> <li>Far East -</li> <li>Electricity generation, distribution and retail</li> <li>Far East -</li> <li>Heat generation,</li> </ul>	LocationDescription-Europe SiberiaHydropower generationImage: Compare the second seco	LocationDescriptionGenerationTransmission-Europe - Siberia - Far EastHydropower generationImage: Siberia Siberia SiberiaRussian Grids / Fe Company (natural-Electricity retail businessSiberiaElectricity retail businessFar East - electricity marketElectricity generation, distribution and retail istribution and retailImage: Siberia	LocationDescriptionLine of business-Europe Siberia Far EastHydropower generationRussian Grids / Federal Grid Company (natural monopoly)-Europe SiberiaElectricity retail businessFar East -Electricity generation, distribution and retail Heat generation,Image: Siberia -Russian Grids company (natural monopoly)-Far East -Electricity generation, distribution and retailImage: Siberia -Image: SiberiaFar East -Heat generation, Heat generation,Image: Siberia -Image: Siberia -	LocationDescriptionLine of business-Europe - Siberia - Far EastHydropower generationRussian Grids / Federal Grid Company (natural monopoly)Europe - SiberiaElectricity retail businessFar East -Electricity generation, distribution and retail Heat generation,-Russian Grids (natural monopoly)Image: Company (natural monopoly)-Far East -Electricity generation, distribution and retail Heat generation,Image: Company (natural monopoly) Not applicable toImage: Company (natural monopoly) Image: Company (natural monopoly)



### Best dividend story and practice among Russian SOE utilities

- Board of Directors of RusHydro recommended the AGM to pay out 50% of 2016 IFRS net profit or 4.66 kopecks per share. Ex-dividend date – July 7, 2017.
- As of 2015, RusHydro dividend policy provides for dividend payment based on consolidated IFRS net profit.
- 2016 dividends based on RAS net profit were determined in conformity with Government order regarding SOE dividends, providing for payout of 50% of the highest resulting net profit (under IFRS of RAS).
- Dividends to be paid out reduces RusHydro liabilities (and effective rate) under the forward contract with VTB. 50% of net profit payout reduces annual forward rate by more than 4%<sup>(1)</sup>.

Dividend yield of the Russian generating companies <sup>(2)</sup>									
Dividenta	yield of th	ie Russia	in generat	ing comp	ames				
	2011	2012	2013	2014	2015	2016	2017		
Krasnoyarskaya HPP	0.0%	4.9%	0.0%	0.0%	0.0%	0.0%	0.0%		
Quadra	1.9%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%		
Unipro (EOn Russia)	0.0%	2.6%	10.8%	16.2%	8.8%	7.2%	7.8%		
RusHydro	0.6%	<b>1.0%</b>	1.3%	2.3%	2.5%	6.5%	5.6%		
Irkutskenergo	0.4%	0.8%	3.3%	5.4%	7.7%	0.0%	0.0%		
Mosenergo	0.6%	1.7%	2.2%	4.6%	1.0%	3.6%	3.6%		
InterRAO	0.0%	0.0%	0.0%	0.0%	0.1%	0.8%	3.6%		
Enel Russia	0.0%	0.0%	0.0%	5.0%	9.0%	0.0%	6.8%		
TGK-1	0.2%	0.5%	1.7%	2.6%	4.8%	4.9%	2.8%		
OGK-2	0.3%	0.1%	0.0%	0.0%	2.9%	2.1%	2.1%		
T Plus (KES Holding)	0.0%	0.0%	0.0%	0.0%	0.00%	0.0%	0.0%		







Dividends not only would fully cover due quarterly payment on forward, but will also finance more than 40% of the next quarterly payment.

(2) Calculated based on the date of announcement of recommendations on dividends by the Board of Directors.

Calculated based on close price on May 24, 2017 - date of announcement of recommendation on dividends by the Board of Directors.



# RusHydro

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IV. Russian power market outlook

## Strategic priorities and development tasks



- Going through a peak of capex funding with completion of key HPPs and fossil fuel projects (Nizhne-Bureyskaya HPP, Ust-Srednekanskaya HPP, Zaramagskaya HPP-1, four priority projects in the Far East, Vostochnaya CHP)
- Attaining sustainable positive free cash flow
- Continuation of rehabilitation and modernization program



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2011 2012 2013 2014 2015 2016 2017 2018 2019 2020
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lusHvdro

- Steady growth of dividends in absolute terms in the long-term in the interest of the government and shareholders
- Creating conditions for dividends payment from positive free cash flow, as well as more stable and predictable dividends
- Reliable electricity supply to current and prospective customers in the Far East
- Introduction of long term tariff regulation in the Far East Federal District providing for return on invested capital, full compensation of operating costs and prevention of further debt build-up of Far Eastern subsidiary utilities as well as creation of competitive environment
- Developing proposals for decommissioning and substitution of obsolete capacity based on review of alternative options
- Low-carbon development of RusHydro Group, development of renewable energy sources for sustainable development and minimization of environmental impact
- Increased transparency and improved corporate governance
- Introduction of best practice environmental technologies, environmental safety, energy saving and increased energy efficiency

# Key factors of RusHydro Group value growth plan<sup>(1)</sup>

On October 27, 2017, the Board of Directors approved the value growth plan of RusHydro Group through 2021 and commissioned the Management Board to prepare necessary applications to the Government of the Russian Federation for organization of measures in support of the Plan, as well as draft regulations aimed at introduction of long-tem tariffs and return on investment principles.



Effects estimate as at 2017.

Measures, aimed at improved energy efficiency and optimization of subsidiaries' activity.

# Overview of forward contract with VTB



6.22%

Current effective forward rate -0.62 p.p.

Reduction of average rate of RusHydro Group debt portfolio due to the forward contract <sup>(1)</sup>

# 476

### **RUB** mn

Effect from reduced payments to the Bank due to reduction of the CBR's key rate 2017

# >RUB 5bn

Expected effect from reduced payments to the Bank due to reduction of the CBR's key rate for 5 years<sup>(2)</sup>

No mandatory buy-back of shares from VTB Bank by RusHydro ("put)	×
Dividends paid to VTB will be netted against quarterly interest payments	$\checkmark$
Potential additional income for RusHydro in case of further sale of the stake at a price above RUB 55 bn	✓
Option of early settlement before expiration of the 5-year term	✓
Review of the forward rate along inline with CBR key rate	$\checkmark$
Requirement of Gov't approval of sale of VTB Bank stake to strategic investor	✓
The fair value of forward capitalized at initial recognition is not a subject to change	✓

- Significant volume of RusHydro's potential liabilities will be covered by third party investors via sale of RusHydro's shares and dividend paid to VTB
- The transaction creates strong long-term incentives for the management to maximize company value in the interest if all shareholders
- Funds raised via the forward contract transaction were used for repayment of external debt of RAO ES East Subgroup companies, allowing to significantly reduce consolidated debt of RusHydro Group.
- Primarily short term bank loans were paid back, improving duration of the overall debt portfolio



# Investment plan of RusHydro Group in 2017-2022, RUB bn (incl. VAT)





# Potential implementation of Taishet Aluminum Smelter (TaAZ) project jointly with UC RUSAL<sup>(1)</sup>





#### Taishet aluminium smelter project parameters

Annual aluminium output ('000 tonnes) Electricity/capacity consumption, TWh p.a. / MW Technology	428.5 6.2 / 714 RA-400	Construction of Taishet Aluminium Smelter in Irkutsk region began in
Capex in 2005-2016 (not including VAT), USD mn	776	May 2008, but was suspended in a
Residual capex (not including VAT), USD mn	700	year. Initial project foresaw
Full construction cost (not including VAT), USD mn	1 476	beginning of production in 2011.
Requirement in project finance for construction completion, USD mn	up to 940	

#### Current scenario for participation in the transaction

Price of 50% share in the project: USD 388 mn

- ✓ Partial payment for TaAZ share with a stake in Irkutsk Grid: USD 150 mn
- ✓ Partial payment for TaAZ share from the cash flow of TaAZ: USD 150 mn
- ✓ Confirmation by RUSAL of interest-free deferral of payment for residual share for the 3-year period after TaAZ reaches project capacity : USD 88 mn

Calculation of total effect for RusHydro from participation in TaAZ p	project, RUB bn
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CAPEX →	0%	+10%	+15%
Consensus + ع 1% growth rate	7.7	5.8	4.8
<ul> <li>B 1% growth rate</li> <li>Consensus +</li> <li>2% growth rate</li> </ul>	18.5	16.6	15.6
Al futures	33.6	31.7	30.8

• Synergy effect for RusHydro is expected from higher electricity prices on the back of increased energy consumption in Siberia.

- Participation of RusHydro in the project does not assume any preferential conditions for supply of electricity between RusHydro and TaAZ.
- Implementation of TaAZ project does not assume expansion of Boguchansky aluminium smelter beyond capacity of 300 tonnes p.a.

RusHydro (1) Key conditions of RusHydro's participation TaAZ project, approved by the BoD on August 30, 2017, are presented in the Appendix.

# KPIs and top management LTI plan

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RusHydro's long-term incentive plan developed in order to align interests of top management and shareholders

Management **KPIs** 



Long term incentive program

Integrated innovation KPI, %

LTIP's goals and principles

- Motivating management towards solution of strategic tasks
- Aligning interests of shareholders and management in sustainable . capitalization growth
- Transparency for shareholders
- Compensation based on the level of KPI implementation
- Compensation determined through unified procedure
- Equitable conditions for entitlement to compensation •





50%

1

25%



# RusHydro

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**III. Operating & financial results** 

IV. Operating & financial results

# Consolidated results of RusHydro Group under IFRS for 3<sup>rd</sup> quarter and 9 months 2017 <sup>(1)</sup> (1/2)

<b>268.7</b> <b>RUB bn</b> <b>Revenue</b> for 9 months of 2017 (-3.6%)	<b>71.6</b> <b>RUB bn</b> <b>EBITDA</b> for 9 months of 2017 (+1.6%)	<b>30.8</b> <b>RUB bn</b> <b>profit</b> for 9 months of 2017 (-17.6%)	+3.4% Manageable costs trend for 9 months of 2017 (CPI for the period +4.1%)	-	<ul> <li>Positive factors:</li> <li> Increased capacity sales due to commissioning of Zelenchukskaya HPP-PHPP; </li> <li> Liberalization of capacity market in Siberia since May, 2016; </li> <li> Implementation of cost cutting program; </li> <li> Favourable operating results of HPPs in the 1-st price zone. </li> <li> Negative factors: Lower spot prices for 9 months of 2017 in comparison with 2016; Higher fuel expenses of RAO ES East Subgroup.</li></ul>
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Comparable data of 2016 excluding contribution of LLC ESC of Bashkortostan are given on basis of management accounting exclusively for information purposes.
 Adjusted for the effects of recognition of financial expense resulting from change in fair value of non-deliverable forward contract, impairment of fixed assets, impairment of accounts receivable, profit / loss on disposal of property, plant and equipment, financial result of disposal of subsidiaries.





In 2016, EY performed independent audit of costs of RusHydro Group. Three key areas of activities have been analyzed. Estimated effect from optimization may amount to **<u>RUB 8.8-15.1 bn annually</u>** in operating expenses and up to **<u>RUB 5 bn</u>** in capital expenses.





On November 22, 2016 The Board of Directors approved cost optimization and operating efficiency plan based on independent audit of PJSC RusHydro and its subsidiaries

# Operating expenses optimization

#### Optimization of four items of operating expenses with the biggest potential and cost control option will allow to decrease costs by **2.4-4.7%** or **<u>RUB 8.8-15.1 bn p.a.</u>**





(1) Consolidated financial statements of RusHydro Group under IFRS for 2015.

) Assessment of potential effect is based on 2015 results and doesn't include the inflation rate during the period of its achievement







(1) Originally the Audit was conducted under assumption of partial integration of HQs of RAO ES East and RusHydro. In 2017 decision was made on full integration of the HQs.



*960*<sup>(1)</sup>

# Debt profile

RusHvdro

- **Key highlights**
- Total financial debt of RusHydro Group as of November 30, 2017, amounted to RUB 213.5 bn
- A low-interest and FX risk debt portfolio with ca. 95% of the facilities RUB-denominated and ca. 98.5% bearing fixed interest rate, and the sources are well diversified
- Weighted-average maturity of debt above 2.6 yrs, effective rouble interest rate of ca. 9%.
- Net debt/EBITDA of RusHydro Group reduced to comfortable level of 1.4x (further reduction to 1.2x by end of 2017 is expected after cancellation of Boguchankaya HPP suretyship).
- RusHydro's RUB 20 bn 5-year Eurobond issue with coupon rate of 8.125% placed in September 2017 won Cbonds Awards 2017 in nomination "Best rouble denominated transaction in international market".



Information on RusHydro group debt portfolio base on management accounting data as of Oct 31, 2017 (accrued interest not included in debt). (1)

- Actual indicators based on published RusHydro Group IFRS data for respective period. (2)
- Debt repayment profile from 2018 does not reflect Boguchanskaya HPP guarantee, leasing, settlement under forward contract with VTB and payment of interest on loans. (4)

# Credit ratings

Key events

✓ In 2017, S&P and Moody's raised RusHydro's credit ratings to the sovereign level of the Russian Federation

✓ In October 2017, ACRA assigned to RusHydro top rating of "AAA(RU)"

### Credit ratings (outlooks) of a number of SOEs $^{\left( 1\right) }$

lssuer	S&P Rating / Outlook	<b>Moody's</b> Rating / Outlook	Fitch Rating / Outlook	ACRA Rating / Outlook
<b>Russian Federation</b>	BB+ / Positive	Ba1 / Stable	BBB- / Positive	AAA(RU)
RusHydro	BB+ / Positive ☑ Apr 2017	Ba1 / Stable	<b>BB+ /</b> Stable ☑ Jun 2017	AAA(RU) / Stable
Russian Railways	BB+ / Positive	Ba1 / Stable	BBB- /Positive	AAA(RU) / Stable
Gazrpom	BB+ / Positive	Ba1 / Stable	BBB- / Positive	_ (2)
Rosneft	BB+ / Positive	Ba1 / Stable	-	-
Atomenergoprom	BB+ / Positive	Ba1 / Stable	BBB- / Positive	-
Federal Grid	BB+ / Positive	Ba1 / Stable	BBB- / Positive	AAA(RU) / Stable
InterRAO	-	Ba1 / Stable	BBB- / Positive	-
Russian Grid	BB+ / Positive	Ba1 / Stable	-	-



# RusHydro Group 4Q & FY 2017 operating results

- Record operating results driven by rational utilization of increased water inflows to major reservoirs of the Volga-Kama cascade, modernization and commissioning of new power plants;
- Total electricity generation by RusHydro's HPPs of the Volga-Kama cascade has reached second highest result since its inception;
- Electricity output by RusHydro Group's electricity retail companies (excl. LLC ESC Bashkortostan divested in December 2016) in 4Q amounted to 5,781 GWh (-7.7%), in 2017 20,717 GWh (-5.5%);
- In 2017, heat output by thermal plants of RAO ES East decreased by 5% to 29,924 thousand GCal as compared to same period of 2016;
- Water inflow to the reservoirs of the hydropower plants of the Volga-Kama cascade in 1Q 2018 is expected to be higher than long-run average, to reservoirs of all other major hydropower plants of the Group it is expected to be close to the long-run average.







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# Changing tariff regulation in the energy sector of the Far East as a strategic development priority



*"I would like to highlight that Capacity Supply Agreement plan might encompass the energy system of the Russian Far East"* 

Alexander Novak, Minister of Energy of Russia at a meeting on development of power generation (hosted by V.Putin), November 14, 2017 RusHydro is developing a long-term program of obsolete capacity substitution and is preparing proposals on stage-by-stage transition of the Far East energy sector to tariff regulation based on return on invested capital



"Development of the Far East should be accompanied by development of the energy sector infrastructure, otherwise this might become a hindering factor. Now, that the new Capacity Supply Agreement program is being discussed, I think it is important that the Program includes the Russian the Far East."

Nikolay Shulginov, Chairman of the Management Board of RusHydro, at a meeting devoted to development of power generation (hosted by V.Putin), November 14, 2017



- Substitution of obsolete capacity by construction of new generation and grid facilities.
- ✓ Improved reliability of energy supply in the Far East, improved safety of facilities and lower accident rate in the energy sector if the region.
- ✓ Higher company value due to implementation of projects with guaranteed return.
- Creating opportunities for efficient energy projects reflecting competition between investors.

Far East TPPs, operating over normative life span (by commissioning year)

Vladivostokskaya CHPP-1 <sup>(1)</sup>	1911
Mayskaya GRES	1935
Artemovskaya CHPP	19 <b>3</b> 6
Arkagalinskaya TPP	1954

> 70%
 wear and tear of equipment of energy facilities in the Far East District



# Tariff 'smoothing' in the Far East – implications for the region and RusHydro Group

The mechanism of 'tariff smoothing' aims to lower the economic burden for the industry and other commercial electricity consumers in developing Far Eastern regions, increase competitiveness of regional economies and promote investment in the Far East

Основные положения

- On Dec 8, 2015, the President of the Russian Federation ordered to develop a mechanism aimed at <u>decreasing end-user electricity tariffs in the Far</u> <u>East of Russia (except for tariff for households) to</u> <u>an average level of tariffs in Russia.</u>
- RusHydro was selected as recipient of the surcharge.
- The mechanism sees RusHydro collecting additional revenue via capacity sales (KOM price) and transferring the proceeds in full to selected Far Eastern regions to offset losses incurred by subsidized power sales (see Appendix).
- The base level of end-user tariff for 2017 was set at Rub 4/kWh and total surcharge to RusHydro's KOM price was set at RUB 24 bn, for 2018 set at respectively Rub 4.3 and Rub 35 bn.
- In 2017, the mechanism came into effect 5 out 9 regions in the Far East with an average end-user power tariff >RUB 4/kWh.





# Mechanism of surcharge transfer for lowering end-users electricity tariffs in the Far East



# Electricity and capacity prices – expected to remain broadly stable



- Electricity prices:
- In the European part of Russia prices are expected to remain broadly stable due to modest demand growth and slow pace of gas tariff indexation

**Key highlights** 

- In Siberia prices are supported by coal price dynamics (which are not regulated as opposed to gas tariffs)
- Capacity prices:
  - Base KOM prices that have been set on respective competitive auctions are subject to indexation ("CPI for the preceding year minus 0.1%" in 2018 onward)
  - Free capacity contracts (which the Company has only in the European part of Russia) are linked to KOM prices
  - Average DPM prices are much higher than KOM prices to provide required return on new investments







(1) Source: one-day-ahead (spot) selling prices data from the Administrator of the trading system (ATS)

(2) Indexation equals to "CPI for the preceding year minus 1 p.p." in 2017 and "CPI for the preceding year minus 0.1 p.p." in 2018-2021 cumulatively

# RusHydro Group exposure to unregulated and regulated power markets

Wholesale electricity market

- Two commodities: electricity and capacity
- Pricing (non-pricing) zones:
  - 1st pricing zone (European part of Russia)
  - 2<sup>nd</sup> pricing zone (Siberia)
  - Non-pricing zones (Far East and some regions in the European part)
- In the pricing zones:
  - Electricity prices are primarily unregulated
  - Capacity prices are primarily unregulated / determined on the basis of long-term mechanisms
  - Regulated contracts (tariffs) are applicable only to specific groups of customers (such as households) and certain regions
- In non-pricing zones:
  - the sector is fully regulated

Other markets / businesses

- Retail electricity market:
  - Sales premiums of "guaranteeing suppliers" are regulated<sup>(2)</sup>
- Electricity distribution fully regulated
- Heat fully regulated









**RusHydro** (1) AKRA estimates

# Capacity remunerated under capacity supply agreements (DPM) <sup>(1)</sup>





RusHydro (1) Market Council data

# Electricity and heat production in Russia<sup>(1)</sup>

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dynamics.





RusHydro (1) AKRA estimates

# Electricity and capacity prices dynamics in Russia



#### Results of 2016, 2017-2019, 2020 capacity auctions

- In November 2015, System Operator held 2016 capacity auction (KOM) under new rules;
- In December 2015, first 3-year capacity auction was held for 2017-2019;
- for the first time auctions were held within all of the price zones (previously – within smaller free-flow zones in 2 price zones);
- KOM prices in 2017-2019 will be hiked to CPI of the preceding year

	3-year capacity auction results						
	<b>2015</b> <sup>(4)</sup>	2016	2017	2018	2019	2020	2021
1 <sup>st</sup> price zone (Europe)	123,842	112,624	113,207	110,992	110,451	115,199	134,393
2 <sup>nd</sup> price zone (Siberia)	179,000	189,191	181,760	185,739	190,281	190,512	225,339





### Regulated market overview

Key highlights

- Electricity tariffs demonstrated healthy growth over the period of 2015-2018, which exceeds average CPI levels for the period
- Indexation of capacity tariffs in 2015-2018 amounted to 12.0% in the European part and 11.0% in Siberia (cumulatively)
- In the Far East, tariffs (on electricity and heat) vary depending on the region. In 2017-2018, most of them were subject to indexation above CPI levels





Electricity and	heat tariffs	growth in t	he Far East		
	Electrici	ty tariffs	Heat tariffs		
	2017/2016	2018/2017	2017/2016	2018/2017	
DGK	5.6%	0.8%	3.8%	4.4%	
DEK	7.4%	5.9%	-	-	
Kamchatskenergo	12.1%	11.5%	8.6%	4.2%	
YuESK	-0.8%	6.1%	4.1%	-8.0%	
Magadanenergo	14.4%	12.6%	4.3%	6.3%	
Chukotenergo	11.4%	56.2%	6.2%	11.4%	
Sakhalinenergo	1.2%	10.2%	-2.5%	0.0%	
Yakutskenergo	27.7%	9.0%	11.6%	9.9%	
Sakhaenergo	10.1%	9.5%	11.4%	8.4%	
Peredvizhnaya Energetika	22.3%	4.5%	-	-	





# RusHydro

# Appendix

- In 2017, rivers of the central regions of Russia experienced volatile spring flooding affected by heavy rains with several inflow peaks. Due to prolonged rains inflows in rivers of the central regions was record-high. Overall flows during the spring-summer period was 228.0 km<sup>3</sup> against the long-run average of 198.0 km<sup>3</sup>.
- Lower volumes in Chirkeyskoye reservoir caused by inflows, lower than long-run norm (by 9% on average) during the past 3 years.
- Water level in Sayano-Shushenskoye reservoir reached 538.58 meters. This is the record level in Sayano-Shushenskoye reservoir for the last 11 years.
- Inflows to reservoirs of Angara cascade were low comparable to levels during the last 4 years. Boguchanskaya HPP worked in accordance with instructions from Yenisei Basin Water Resources Directorate reflecting requirements of ship navigation in Lower Angara.
- Inflows to reservoirs of the Far East hydropower plants during spring-summer flood period of 2017 were close to long-run average.
- Inflows to main HPPs of RusHydro Group in 4Q'17 are expected to exceed long-run average by 15-25%.





- Current water volumes in reservoirs of Volga-Kama hydropower cascade are 26% higher than long-run average. Water reserves in other reservoirs of RusHydro Group, with certain exceptions, are close to long-run average.
- The reserves guarantee necessary output of RusHydro HPPs during autumn-winter period of 2017-2018.



# Key conditions of RusHydro's participation TaAZ project, approved by the BoD on August 30, 2017

- Il Obtaining a formal confirmation from banks of availability of project financing sufficient for construction of the smelter to its project capacity. Project financing must not contain any provisions of PJSC RusHydro's and/or any of RusHydro's subsidiaries' guarantees;
- Independent technological and price audit of the market value of 50% ownership stake in TaAS, and which must not exceed USD 388 mn;
- Partial payment for ownership stake in TaAS with a 42.75% stake in JSC Irkutsk Grid Company, owned by RusHydro, at its book value;
- Payment for a residual share in the project (no less than USD 150 mn) from the cash flow of the aluminium smelter after the start of production (liability in the amount equivalent to RusHydro's deferred payment for a residual ownership stake will be recorded on the balance sheet of the JV provided that net asset value of the jointly controlled entity exceeds its authorized share capital);
- !! Confirmation of interest-free deferred payment for a residual share in the project for a period of not less than 3 years after the smelter reaches its project capacity;
- If Sufficient guarantee, provided by UC Rusal, of funding of additional CAPEX in case construction cost exceeds initial amount agreed by parties and confirmed by independent technological and price audit by more than 15%. UC RUSAL will provide additional funding at own expense without increasing its ownership in the project or raising debt to the TaAZ;
- ☑ Full cancellation of PJSC RusHydro's guarantee in respect of 100% liabilities of PJSC Boguchanskaya HPP under the Vnesheconombank loan, obtained for the joint project between PJSC RusHydro and UC Rusal Boguchansky energy and metals complex (BEMO).



# Selected Consolidated Financial Information

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Consolidated income statement		9M ended		Year ended
RUB mn	2017	30 June 2016	2016	31 December 2015
Revenue	248,604	268,644	374,072	347,512
Government grants	20,138	10,214	17,250	14,314
Other operating income	690	2,132	12,422	8,230
Expenses (excl. impairment)	(216,218)	(226,954)	(315,705)	(315,103)
Impairment	(4,989)	(7,227)	(40,500)	(20,272)
Operating profit	48,225	46,809	47,539	34,681
Finance income	6,770	7,237	9,943	12,313
Finance costs	(11,251)	(6,137)	(9,041)	(9,744)
Share of results of associates and JVs	176	928	6,682	428
Profit before income tax	43,920	48,837	55,123	37,678
Income tax expense	(13,116)	(11,437)	(15,372)	(10,519)
Profit for the period	30,804	37,400	39,751	27,159
Consolidated statement of cash flows		9M ended		Year ended
		30 June		31 December
RUB mn	2017	2016	2016	2015
CASH FLOWS FROM OPERATING ACTIVITIES:				
Profit before income tax	43,920	48,837	55,123	37,678
D&A	18,375	18,234	24,130	22,477
Other adjustments	9,163	1,170	20,291	11,480
Operating cash flows	70,996	69,555	99,544	71,635
Working capital and other changes	(12,311)	(19,269)	(15,394)	6,114
Income tax paid	(11,738)	(9,699)	(12,777)	(7,949)
Net cash generated by operating activities	46,947	40,587	71,373	69,800
CASH FLOWS FROM INVESTING ACTIVITIES:				
Purchase of property, plant and equipment	(41,112)	(40,674)	(60,957)	(79,238)
Changes in bank deposits and other investments	(2,623)	15,247	15,484	19,028
Interest and dividends received	6,297	5,617	7,094	8,953
Other investing cash flows	111	(7,331)	13,461	2,876
Net cash used in investing activities	(37,327)	(27,141)	(24,918)	(48,381)
CASH FLOWS FROM FINANCING ACTIVITIES				
Proceeds from share issue	40,000	-	-	-
Proceeds from sale of treasury shares	15,000	-	-	-
Proceeds from current debt	46,943	57,499	64,855	83,896
Proceeds from non-current debt	50,203	45,630	71,829	36,487
Repayment of debt	(109,719)	(79,709)	(128,291)	(102,851)
Interest paid	(11,927)	(15,030)	(20,271)	(19,498)
Dividends paid to shareholders of PJSC RusHydro	(19,650)	(14,226)	(14,228)	(5,712)
Other financing cash flows	(3,781)	(647)	(731)	(906)
Net cash generated by financing activities	7,069	(6,483)	(26,837)	(8,584)
Effect of forex	(161)	(352)	(289)	796
Increase in cash and cash equivalents	16,528	6,611	19,329	13,631

Consolidated statement	9M ended		Year ended
of financial position	30 June		31 December
RUB mn	2017	2016	2015
ASSETS	2017	2010	2015
Non-current assets			
Property, plant and equipment	799,053	765,047	744,585
Investments in associates and JVs	20,011	20,278	14,142
Available-for-sale financial assets	20,479	21,181	6,094
Deferred income tax assets	7,052	6,640	5,486
Other non-current assets	22,933	21,847	21,402
Total non-current assets	869,528	834,993	<b>791,709</b>
Current assets	805,528	834,993	751,705
Cash and cash equivalents	83,877	67,354	48,025
Income tax receivable	2,753	889	1,396
Accounts receivable and prepayments	55,779	47,076	49,646
Inventories	28,979	24,037	23,999
Other current assets	9,358	24,037 9,097	23,999
Non-current assets held for sale	311	9,097	788
TOTAL ASSETS	1,050,585	983,446	938,137
EQUITY AND LIABILITIES	1,030,385	565,440	558,157
Equity			
Share capital	426,289	386,255	386,255
Treasury shares	(4,613)	(22,578)	(26,092)
Share premium	39,202	39,202	39,202
Retained earnings and other reserves	243,195	243,790	203,114
0	2,347	4,263	203,114 11,440
Non-controlling interest TOTAL EQUITY	706,420	4,205 650,932	613,919
Non-current liabilities	700,420	030,932	013,919
Deferred income tax liabilities	42,938	39,086	37,034
Non-current debt	122,949	158,046	135,179
Non-deliverable forward contract	12,557	158,040	155,179
Other non-current liabilities	22,714	- 18,726	- 14,551
Total non-current liabilities	201,158	<b>215,858</b>	14,551 186,764
Current liabilities	201,130	215,656	100,704
Current debt	64,542	41,757	62,214
	63,046	,	60,307
Accounts payable and accruals	676	58,784 858	898
Current income tax payable Other taxes payable	14,420	858 15,257	898 14,035
Total current liabilities	142,684	15,257 <b>116,656</b>	-
TOTAL LIABILITIES	344,165	332,514	137,454 324,218
TOTAL LIABILITIES	1,050,585	332,514 983,446	938,137
	1,000,080	905,440	938,137





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