



# Explaining Russia's Renewable energy Policies

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# How can we explain Russia's REPs ?

- Russia's neopatrimonial regime is **vulnerable** to a global renewable energy transition
  - An independent elite might arise
  - Hydrocarbon rents may decline, reducing the state budget
  - Social and political unrest rises as patronage networks lose clout
- Russia's neopatrimonial regime **adapts** itself by developing REPs in order to mitigate an RET in the medium run (2040)
  - **State-controlled, vertically-integrated renewable energy sector** within existing energy concerns
  - **Gradual shift in energy rents**
  - **Control distribution of rents** between federal and regional elite, as well as oligarchs

# Three Neopatrimonial logics

“The **state and its resources** are governed as a **private patrimonium** of the ruler. (M. Weber)”

- **L1:** The incumbent politico-economic elite seek to monopolize power by means of **control over an emerging renewable energy sector.**
- **L2:** The politico-economic elite seeks to **capture rents of an emerging renewable energy industry** as to compensate future declines in hydrocarbon rents.
- **L3:** Renewable energy **rents are distributed** to preferred clients to maintain or create **loyalty bonds.**

# L1: Control over Renewable Energy Companies



# Vertically-integrated oligarch-led solar company

Renova Group (51%)

Rusnano (49%)

Hevel Solar Group

Hevel Solar PV  
manufacturing plant

Avelar Solar Plant  
Developer

Saint-Petersburg  
Research and  
Development

**erlikon**



## Extending neopatrimonial control towards the renewable energy sector

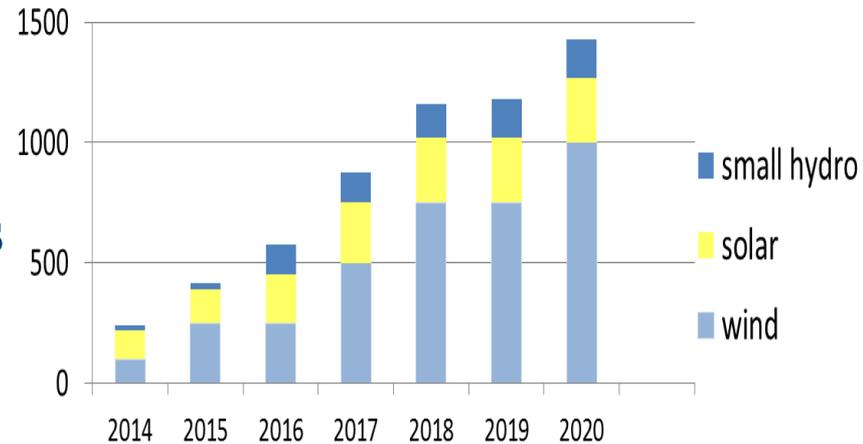
Sector	Solar PV	Wind	Small Hydro
<b>Group</b>	<b>Renova Group</b> (oil, power generation) & <b>Rusnano</b> (hi-tech)	<b>Rosatom Group</b> (Nuclear power plants)	<b>RusHydro Group</b> (Large hydro, Coal)
<b>State involvement</b>	-Rusnano: 99% state-owned (Rosimushestvo) -Renova holding: off-shore (Bahamas)	State corporation	66.8% state ownership
<b>Oligarch</b>	Viktor <b>Vekselberg</b> Anatoly <b>Chubais</b>	Sergey <b>Kiriyenko</b>	Yuri <b>Trutnev</b>
<b>RE subsidiaries</b>	Hevel, T-Plyus/ Orenburg Heat Company, Green Energy Rus	NovaWind/VetroOGK	RusHydro, Energy System of the East
<b>% tender (2013-2017)</b>	<b>55.7%</b> (949/1704.198MW)	<b>61.9%</b> (1022/1651MW)	<b>58.6%</b> (70.44/120.24MW)
<b>Activities</b>	Solar Panel production, Solar power plant construction, R&D, export, electricity sales	Wind turbine production, wind power plant construction, R&D, electricity sales	Hydraulic turbine production, power plant construction, R&D, RE electricity sales

# L2: Capture rents of an emerging renewable energy industry

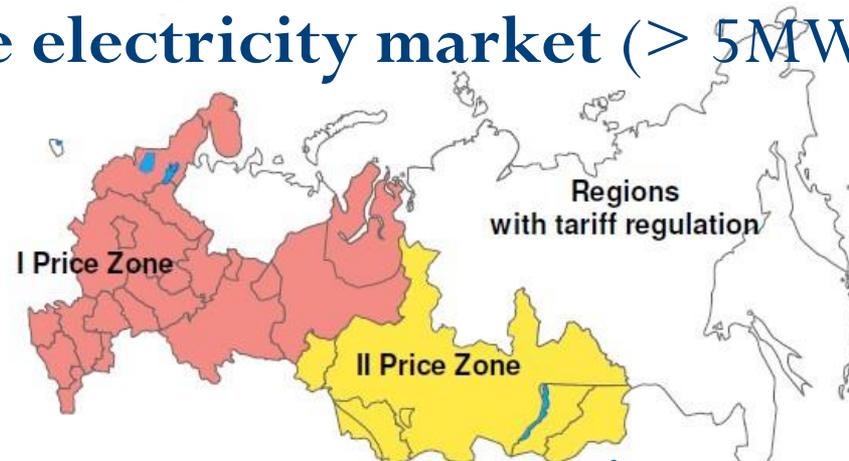


# Open Tender Design

- Fixed Annual **Capacity Limits**



- On wholesale electricity market (> 5MW)



- Guaranteed **12 percent return on investment**
- For a period of **15 years**
- Financed from **electricity consumer contributions**
- Local Content Requirement (**Made in Russia**)

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# Timely commissioned solar power plants (2015)

Company successfully applying for a solar project in 2014-2015 (MW)	Total MW Tendered (% in total capacity)	Commissioned solar power plants by December 2015	Supplier of solar panels
Solar Energy Holding	105 (60%)	0	Astana Solar
Hevel Solar (Renova & Rusnano)	30 (17%)	30	Hevel's Novocheboksarsk solar panel factory
Orenburg Heat Generating Company (T-Plyus, Renova)	25 (14%)	25	Hevel's Novocheboksarsk solar panel factory
MEK Engineering	10 (5.7%)	0	-
EuroSibEnergo	5.198 (3%)	5.198	EuroSibEnergo
Total capacity	175.198	60.198	

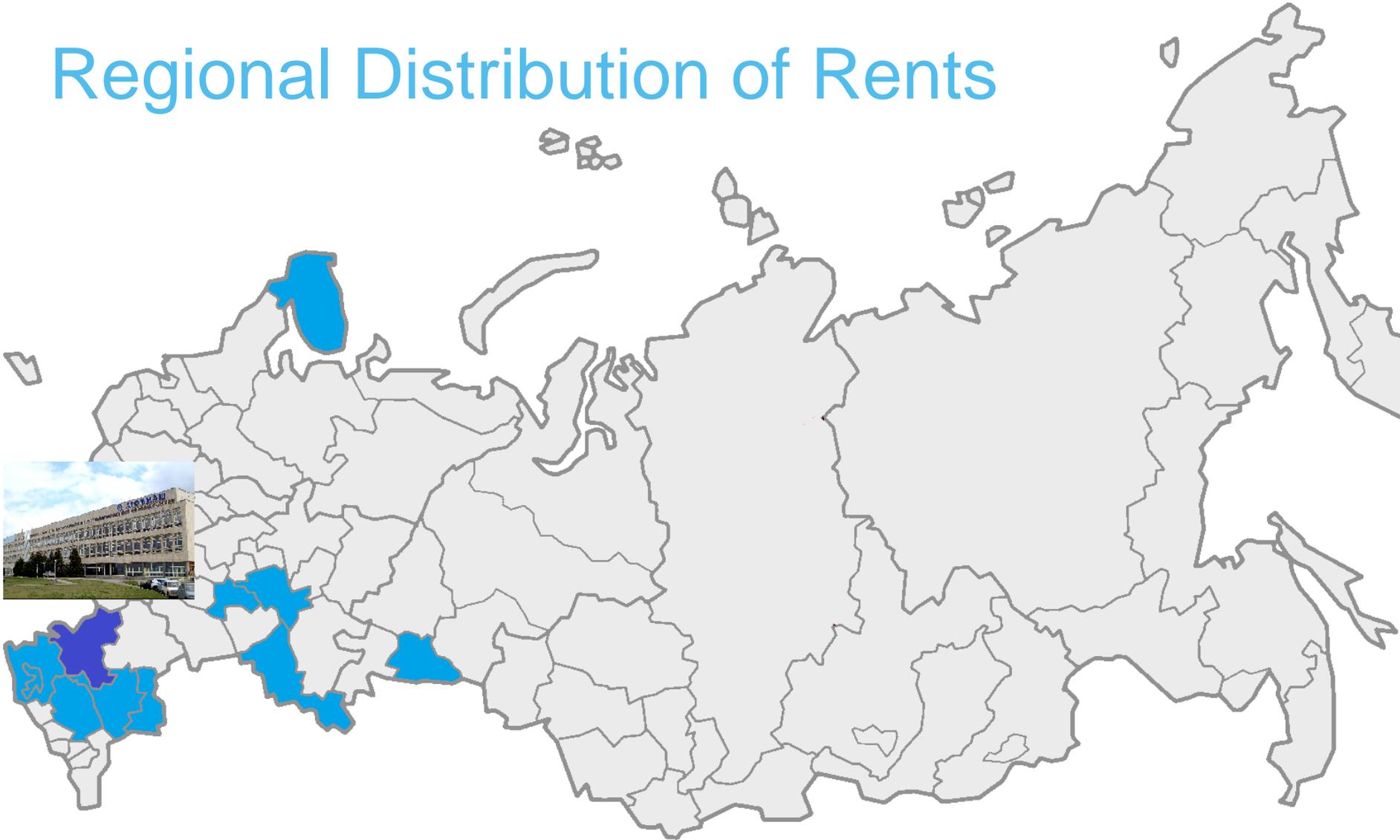
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34% of tendered projects had been timely implemented in 2015

# L3: Distribute rents to create loyalty bounds



# Regional Distribution of Rents



Ranking	Subject of the Russian Federation	Planned Solar Capacity under the CRESS (MW)	Annual Averaged Insolation Incident on a Horizontal Surface (kWh/m2/day)	Average Electricity Price (2014) Rub/kWh Average Russia: 2.88	Insolation x Price	Ranking by insolation x Price	Distance to Solar panel factory
1	Orenburgskaya	365	3.5567	3.03	10,77680	7	1168
2	Volgogradskaya	180	3.503	2.98	10,43894	8	935
3	Bashkortostan	126	3.535	2.55	9,01425	13	772
4	Saratovskaya	125	3.4658	3.15	10,91727	6	653
5	Buryatia	120	3.466	2.95	10,2247	10	5477
6	Stavropolskiy Krai	115	3.6158	3.35	12,11293	3	1599
7	Samarskaya	105	3.287	2.87	9,43369	12	515
8	Astrakhanskaya	90	3.703	3.01	11,14603	4	1508
9	Zabaykalskiy Krai	75	3.8467	2.87	11,04002	5	5800
10	Kalmykia	70	3.602	4,01	14,44402	1	1498
11	Omskaya	70	3.2642	2.46	8,029932	16	2045
12	Altaiskiy Krai	60	3.5425	2.88	10,2024	11	3002
13	Chelyabinskaya	60	3.259	2,73	8,89707	14	1123
14	Lipetskaya	45	3.0233	3.45	10,43038	9	659
15	Altai Republic	20	3.8833	3.57	13,86338	2	3342
16	Belgorodskaya	15	3.1708	2.71	8,592868	15	1189
17	Irkutskaya	15	3.3183	1.39	4,612437	19	4538
18	Dagestan	10	3.8375	2	7,675	17	2047
19	Khakassia	5.198	3.2683	2.02	6,601966	18	3696

# Restricting rents to a prosumer class

- **Late** initiative to facilitate rooftop solar
  - 2009-2017 no legal basis: either producer or consumer
- **Long** adoption process of first law on microgeneration
  - 2017-2019 ongoing (now in state Duma)
- Draft law on microgeneration **does not stimulate as it**
  - **Excludes 74.2% of population** as apartment blocks are not eligible + limited to installations up to 15 kW
  - Offers **insufficient payment for excess** green electricity to the grid: wholesale electricity price

# Conclusion: Neopatrimonial explanations

- Russia's elite took **control over RE companies** via existing energy concerns
  - Access to financing
  - Privileged position in open tender
- Russia's elite **seeks RE rents**
  - Consumer contributions to state controlled RE companies
  - Limit rents of prosumers
- Russia's elite **distributes rents to maintain loyalty bounds**
  - Among national and regional elites
  - Restricts a prosumer class from emerging