

# RJE3 Achievement Report



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# Plan

1.  
Introduction  
of research

2.  
What did I  
learn at  
Hokkaido  
University?

3.  
How would I like to  
use the  
achievements of  
the study at HU for  
my research?





Introduction of research thesis





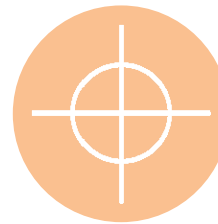
# TOPIC OF RESEARCH

“ANALYSIS OF ENERGY CONSUMPTION  
IN REPUBLIC OF SAKHA (YAKUTIA)  
AND IMPROVEMENT OF SUBSIDIZING MECHANISMS  
IN ISOLATED AREAS OF THE NORTH”



## THE RELEVANCE

the problem of energy consumption in the northern regions, where low temperatures and significant fluctuations during a year characterized by a greater part of this region of Russia



## THE AIM

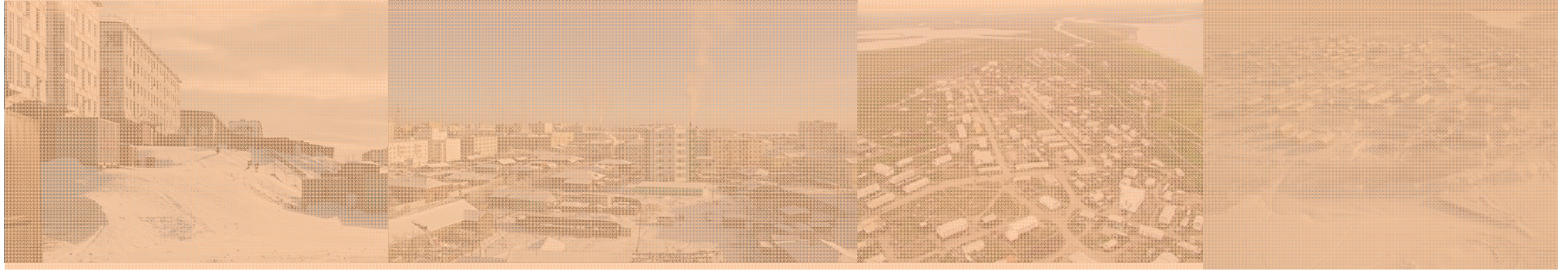
to improve energy consumption and efficiency in isolated northern regions of the Republic of Sakha (Yakutia)

## TASKS

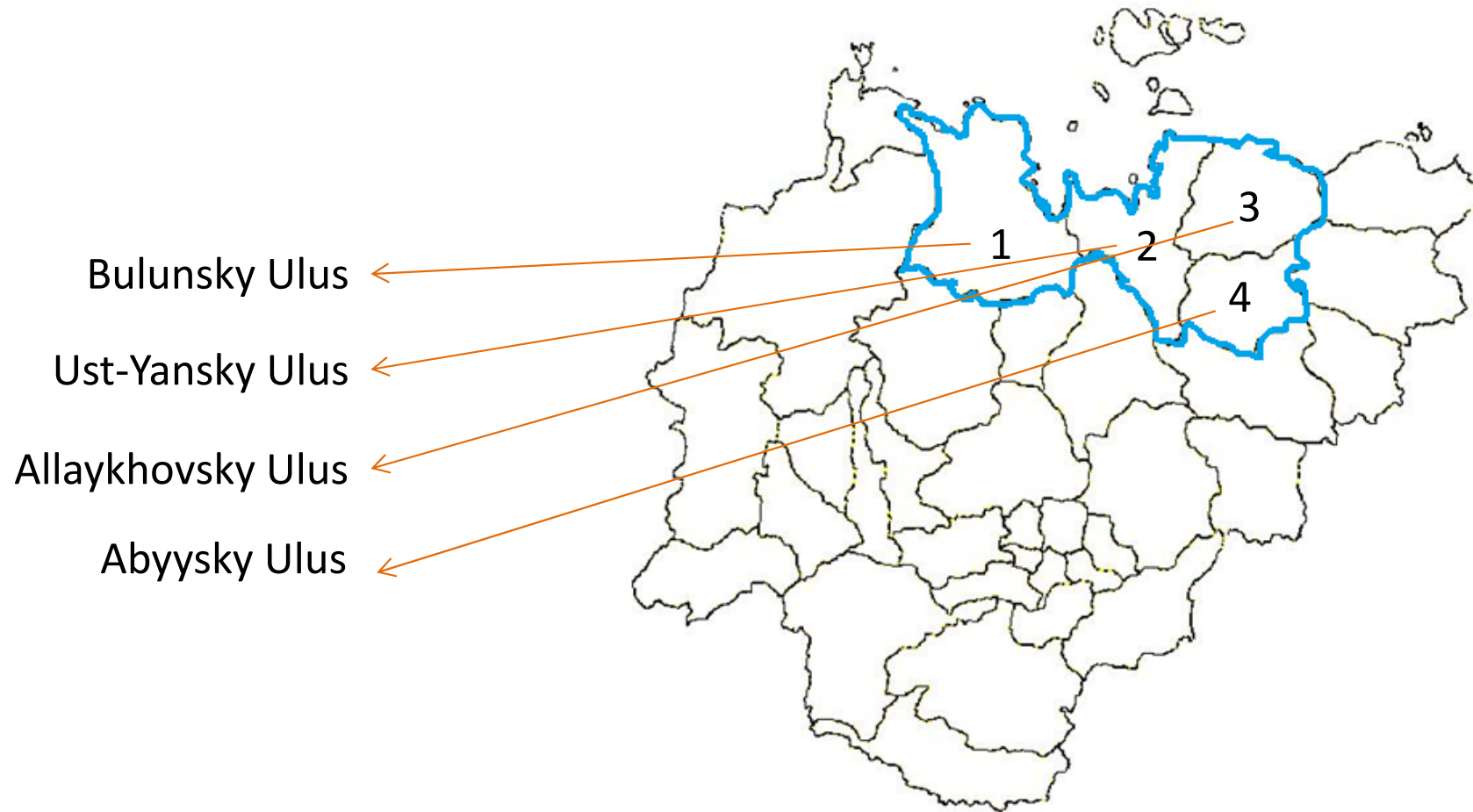
calculation of energy consumption and generation in the study area, an analysis of existing documents and activities aimed at efficient energy consumption, evaluation of existing problems in the energy sector, to develop recommendations on the further use of energy

## METHODS

empirical and comparative analysis of natural (physical) indicators of energy consumption



## STUDY AREA



Bulunsky Ulus

Ust-Yansky Ulus

Allaykhovsky Ulus

Abyysky Ulus

# DATA and DESCRIPTIVE STATISTICS

Collection data from official regional and world sources and Federal State Statistic Service

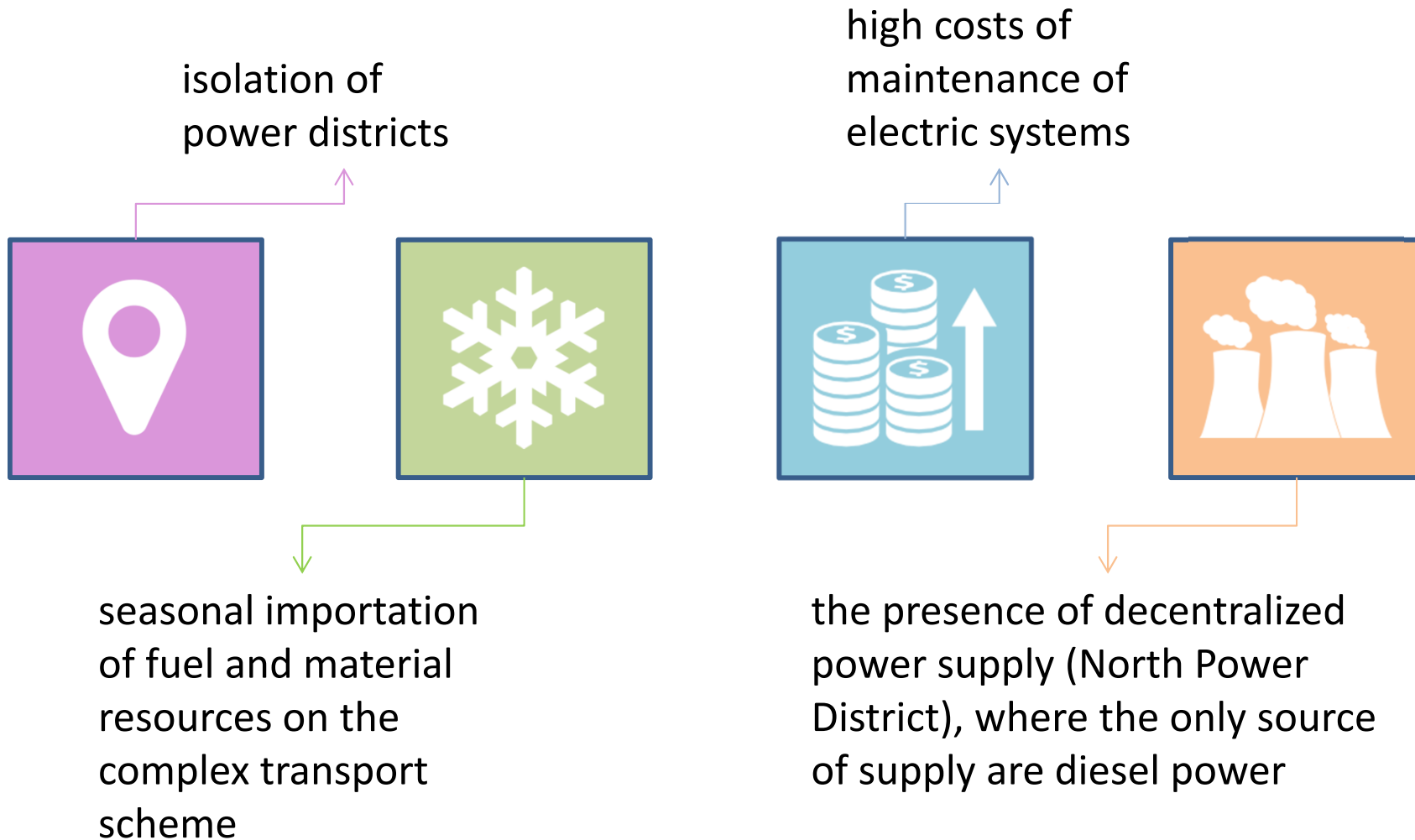
Period of research:  
1992 - 2014

Control factors in the estimation:

- Installed power capacity;
- Regulatory frameworks;
- The extraction of primary energy resources;
- Energy consumption and Generation;
- Utility tariffs;

Power District	Power Plant	Installed heating capacity Gcal-hr
<b>South Power district</b>		
	Neryungri power station	820,0
	Chul'manskaya Heat Generation Plant	165,0
<b>Central Power District</b>		
	Yakutsk power station	548,0
	Yakutsk HEGP	497,0
	Boilers of Yakutsk power station	71,0
	Eldanskaya power station	7,8
	Ust-Maya power station	0,4
	Borogon power station	1,2
	Maya power station	1,0
	Taatta power station	0,5
	Amga power station	1,4
	Churapcha power station	1,2
	Berdygestyakh power station	0,3
	Nam power station	0,3
	Tompon power station	1,0
	Pokrovsk power station	0,8
<b>Western Power District</b>		
	Mirny RPS	39,3
	Lensky Diesel Power Plant	7,5
	Nyurba power station	4,6
	Vilyui power station	2,3
	Verkhnevilyuisk power station	1,4
	Suntarsky power station	1,3
<b>Total</b>		<b>2173,3</b>

# Features and problems of the energy system in the Republic of Sakha (Yakutia)



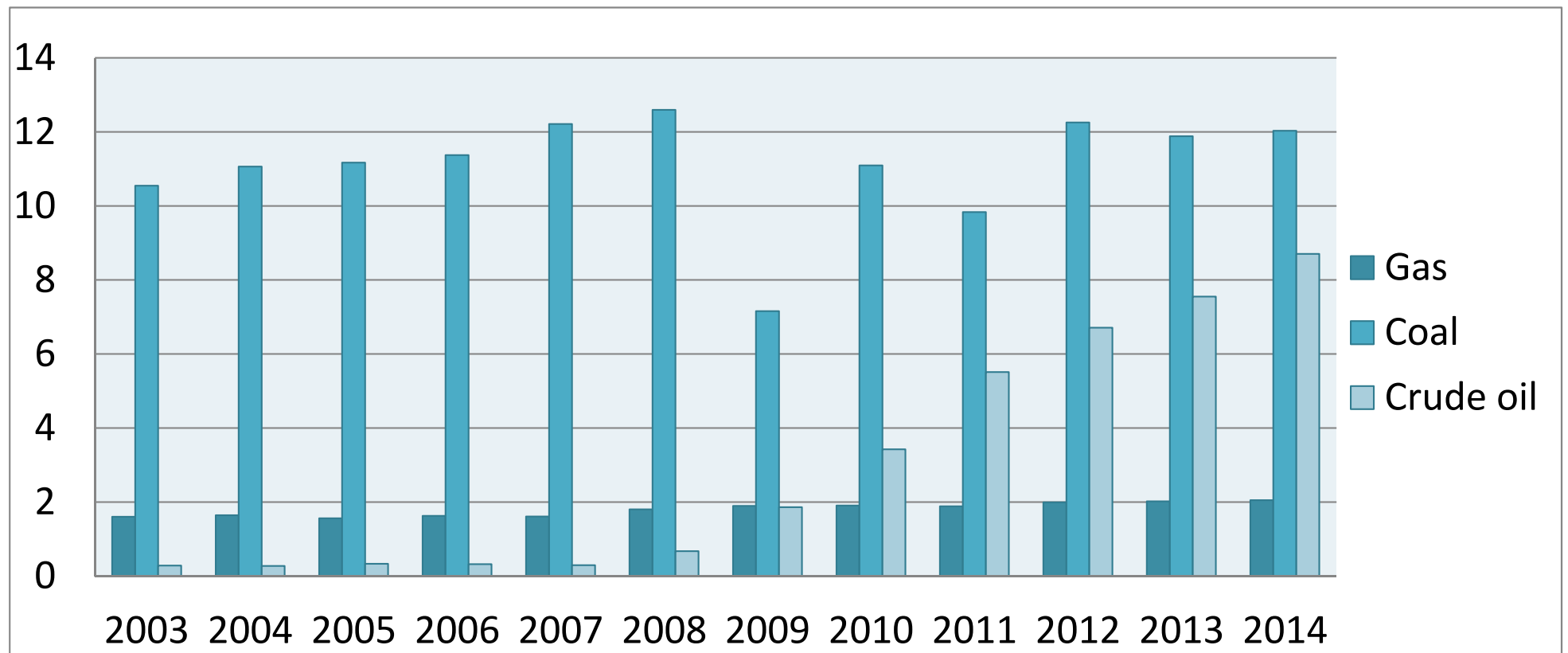




# The regulatory framework and governmental strategy for energy consumption

- Scheme of complex development of productive forces, transport and energy of Republic of Sakha (Yakutia) till 2020;
- Strategy of socio-economic development of the Far East and the Baikal region for the period up to 2025;
- Energy Strategy of the Republic of Sakha (Yakutia) for the period up to 2030;
- Integrated development program of Far Eastern Federal Electricity sector for the period up to 2025;
- The General Scheme of the power plants up to 2030;
- Schemes and programs of the Unified Energy System of Russia for seven years;
- The program and the development of electric power industry of the Republic of Sakha (Yakutia) in the 5-year period;
- The State Program of the Republic of Sakha (Yakutia) "Providing quality housing and communal services and the development of electric power industry for 2012-2016";
- Local energy optimization program of the Republic of Sakha (Yakutia)

## Extraction of primary energy resources in Republic of Sakha (Yakutia) from 2003-2014, in mln. tons



Source: <http://sakha.gks.ru>



# Value of electric power generation and consumption in Republic Sakha (Yakutia) from 1992 to 2013, in bln kWh



← Energy generation

Energy consumption →



Source: <http://sakha.gks.ru/>

# RESULTS



There have to be sustainable use of natural resources: ecosystem management, which involves the broadest possible approach to the environment and natural resources on the principles of conservation of biodiversity, taking into account the values of the traditional culture of indigenous peoples and environmental constraints of a balanced use of energy resources of the macro-region.



Significant development in the field of energy consumption requires preparation of the scenario that will reflect to the development of the energy in terms of active implementation of public policies aimed to improve the life in North regions, the efficiency of energy use, stimulating economic growth and modernization of rural areas.



Climatic features of the Republic of Sakha (Yakutia) require high reliability and performance of engineering systems in human settlements.



## Other research papers:

- “Data analysis of economic development of Sakha Republic: comparison with other Far Northern regions of Russia (GDP; Industry; Investment)”
- “The world trade network and environment”



A green-tinted photograph of a snowy winter landscape. The scene is filled with numerous bare trees, their branches heavily laden with snow. A path or road winds through the center of the image, also covered in snow. The overall atmosphere is quiet and serene, typical of a winter day in a park or campus. The text "What did I learn at Hokkaido University?" is overlaid in white, centered horizontally across the middle of the image.

What did I learn at Hokkaido University?





## Attended classes 2015-2016 Fall-Winter

- Special Lectures on International Relations (Hyungjoo Naomi Chi)
- Special Study of Modern Economics and Management (Hisamitsu Saitoh)
- Special Study of Development Economics (Masato Hiwatari)
- Politics and Economics of Slavic Eurasia (Shinichiro Tabata)
- Economic Geography (Seminar) (Takaaki Nihei)
- Slavic - Eurasian Multidisciplinary Studies (Seminar)



## Attended Seminars:

- November 9, 2015 - Seminar "Arctic in Asia: discourses and best practices"
- December 10-11, 2015 - SRC Winter International & SRC 60th Anniversary Symposium "Between History and Memory: Connecting the Generations at SRC 60"
- January 25, 2016 - SRC, Arctic Research Center and Graduate School of Environmental Science Co-hosted Seminar "Comparative Analysis of Trends in the Development of the World Northern Cities and Russia"
- January 28- February 3, 2016 Intensive Courses on Transformation Economics by Prof. Islamov Bakhtior





How would I like to use the achievements  
of the study at HU for my research?



# STUDY PLAN



The analysis of collected literature



The analysis of current policy for subsidizing of energy consumption in remote areas of the north



The analysis of financing from the budget (governmental expenditures)



Statistical analysis of the amount of costs to suppliers of utility services



Possibilities of implementation of smart grids for energy independence of isolated regions



Thank you for your attention!