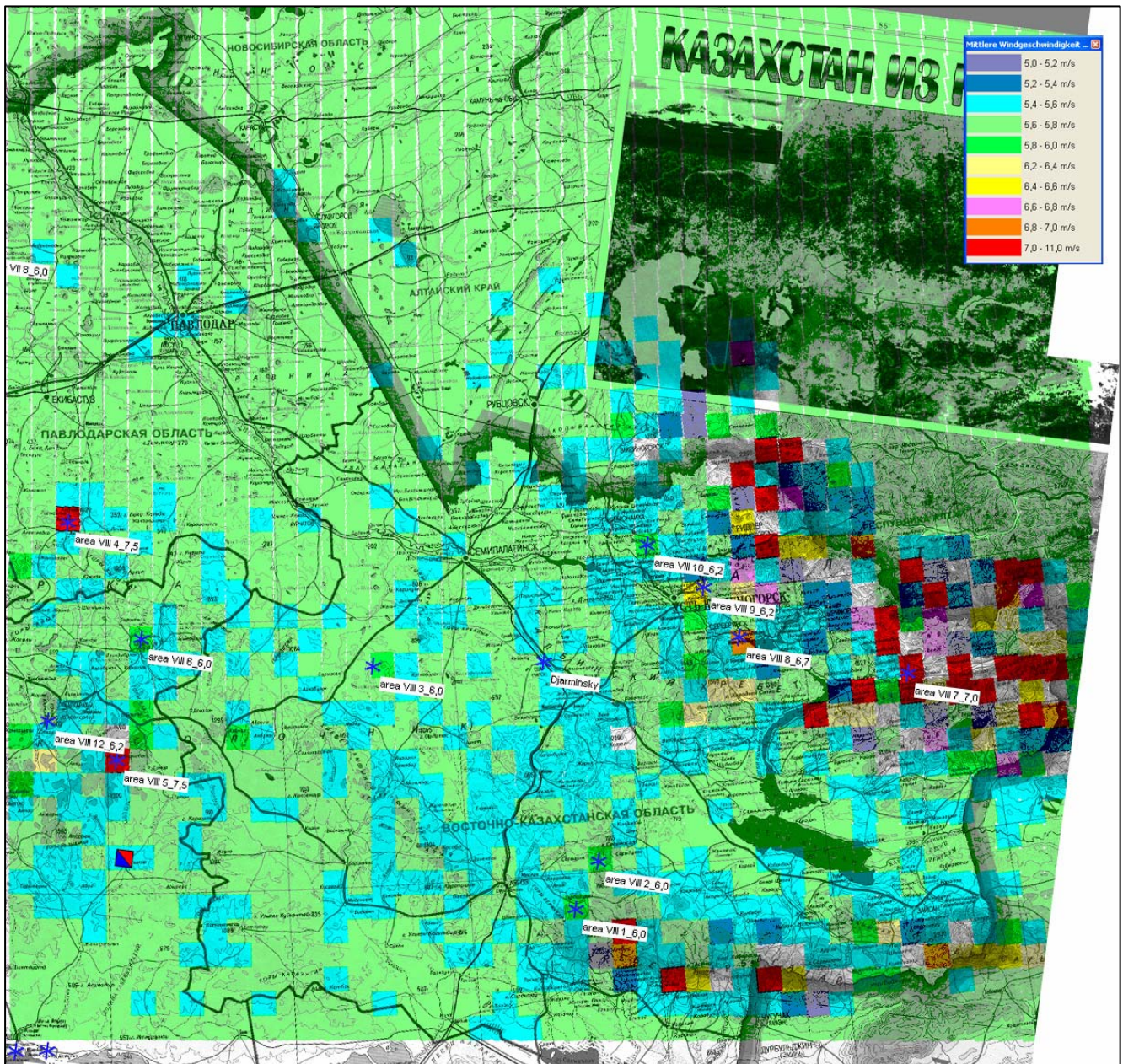


i. Area VIII: Semipalatinsk



Comments:

In region VIII, we have identified two different area:

The western part of the region is composed of plates and round hills highly compatible with wind parks and the eastern area composed of mountains and quite deep valleys where it seems more difficult to implement wind turbines.

The average calculated wind speed for western part of region VIII is between 5,8 and 7 m/s for a few location on the hills (always below 2000 m.).

5 locations have been selected in this part of the region.

The calculated wind speed for eastern part goes up to 9,5 m/s but on the highest peaks of the region in location where no park can be built.

The wind speed for the 5 suitable locations selected on the slope of mountains is between 6 and 7,5 m/s.

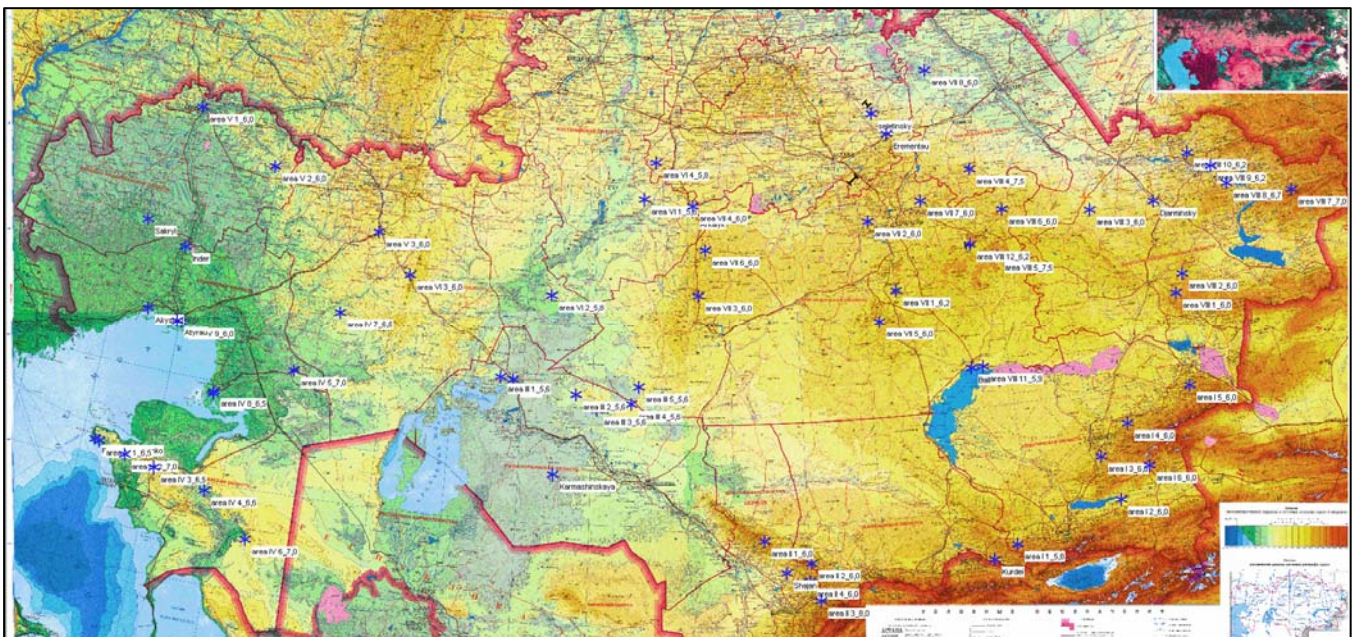
Total, 10 locations have been selected in region VIII but the technical feasibility of wind parks in the eastern part of the region can not be assessed from the resource we have. If a site located in this area is selected then a careful examination of the accessibility would have to be done.

j. Conclusion step 1

66 locations have been selected at step 1 including the 14 locations proposed by Kazselenergo project (minimum 4 per region). These 66 locations are dispatched over almost all the country except the plain east to the Aral Sea and the plain around Baikal Lake where average wind speed is too low and where the topography presents no interesting high plates.

The calculation run at step 1 has shown where the highest wind speed were supposed to be but the value calculated at step 1 are not reliable enough to be used for the definite choice of sites. After the ranking of the 66 selected locations (step 2), a more detailed calculation will have to be run to find the 10 to 15 best areas in order to locate precisely the interesting sites and to assess more accurately the local wind speed. (See also "limits of part I report).

Areas selected at step 1: (see the map in Annex on A3 paper)



E. Step 2: Calculation of marks for area selected at step 1

a. Description

At step 2, we have compared the 66 area selected at step 1 by regarding not only the economical aspects (wind speed, proximity to the network...) but also the environmental and sociological aspects as the energy balance of the area.

The criteria used are described at chapter C of the report.

The table presenting the ranking of the 66 area retained at step 1 is presented in the annex of the report.

b. Conclusion of step 2:

As the highest wind speeds in Kazakhstan are measured along the coast of the Caspian Sea, most of the locations from this region were ranked among the first after step 2 (except location too far from the network). So if we had kept only the 15 best ranked locations for step 3, we would have run a detailed calculation almost only for the region of the Caspian Sea and we would have let aside interesting area in the rest of Kazakhstan.

As our purpose is to propose locations for wind mast for future Wind parks all over Kazakhstan, then we have selected more of the best locations until we have 15 WWA areas for step 3 detailed calculations. As a matter of fact, 24 locations have been retained

c. List of 24 best ranked areas after step 2

Ranking	description	Ranking	description
1	Fort Schevshenko	13	area VIII 12_6,2
2	Arkalyk	14	area IV 8_6,5
3	area VIII 4_7,5	15	area VI 3_6,0
4	area IV 1_6,5	16	Inder
5	Prorva	17	area II 1
6	area IV 2_7,0	18	Gharminsky
7	Kurdei	19	area IV 4_6,6
8	Erementsky Kreis	20	Seletinsky Kreis
9	area VII 4_6,0	21	area VIII 9_6,2
10	area VIII 7_7,0	22	area V 3_6,0
11	area IV 3_6,5	23	area II 2_
12	area VIII 8_6,7	24	area VI 1_5,8