



Russian Wind Projects

Follow Up High Level Meeting

Date 09/03/2021

Kola Project

Photos



CRANE PADS EXCAVATION



INTERNAL ROADS SWAMP FILLING AT SUMMER PERIOD



STRONG BLIZZARDS



SUBSTATION – GIS 35KV –
STEEL STRUCTURES INSTALLATION



T-LINE ERECTED PYLONS



WTG FOUNDATIONS CONCRETE POURING

Kola Project

Crane Pads

UPDATE: 11.03.2021



CRANE PADS (CUMULATIVE)	NOVEMBER 2020	DECEMBER 2020	JANUARY 2021	FEBRUARY 2021	MARCH 2021	1st half of APRIL 2021
CONTRACT	23 completed + test	23 completed + test	23 completed + test	23 completed + test	23 completed + test	23 completed + test
ACTUAL/FORECAST	0	6 (only Q2 – Q6 w/o Q1)	7 (Q2-Q6) + 3 (Q1)	CW 5: 2 (Q1) F-CW 5: 2 (Q1) CW 6: 2 (Q1-Q6) F-CW 6: 1 (Q1-Q6) CW 7: 3 (Q1-Q6) F-CW 7: 2 (Q1-Q6) CW 8: 2 (Q1-Q6) + 2 (Q1) F-CW 8: 0 Target Feb: min. 6 (Q1-Q6) + 4 (Q1) Actual Feb: 4 (Q1-Q6) + 2 (Q1) <u>Total Cum.: 8 (Q1-Q6) not in full</u>	15.03: 53, 54, 55, 56, 57, 49, 48, 47 (8 pcs) Fact: 53 – in work (Q1) 54 – in work (Q1 & grounding) 55 – in work (grounding) 56 – not provided by THM 57 – not provided by THM 49 – not provided by THM 48 – not provided by THM 47 – not provided by THM 22.03: 46, 45, 44 (3 pcs) Fact cum.: 8 (Q1-Q6) not in full Target: 11 in full* Target cum.: 11 in full <i>*Full means with Q1, cable entry, grounding without solenoids</i>	10.04: 50, 51, 52 (3 pcs) Target: 3 in full* Target cum.: 14 in full <i>*Full means with Q1, cable entry, grounding without solenoids</i>
RECOVER REQUIRED AND AGREED DURING HLM OF 08.12.2021		8 100% completed up to final layer (including Q1); today at least 12 foundations are available for grounding system and then Q1	21 100% completed up to final layer (including Q1)	17 (min. 13) 100% completed up to final layer (including Q1)	11	14

ACTIONS & CRITICALITIES:

- Crane Pads** – minimum 6 crane pads fully completed (Q1 – Q6) to have an overall cumulative of 13 crane pads fully completed (Q1 – Q6); moreover, NG commits to achieve an higher target to minimize the contractual delays of minimum 10 crane pads fully completed (Q1 – Q6) to have an overall cumulative of 17 crane pads fully completed (Q1 – Q6)
- Updated Recovery Plan** by NG within **03.02.2020** including interferences
- compaction, eventual sand and tests for all crane pads must be completed in **March 2021** before WTGs components delivery to avoid unsustainable extra costs caused by construction delays

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UPDATE: 11.03.2021



Crane Pads – Workers and Machineries

CRANE PADS	OCTOBER 2020	NOVEMBER 2020	DECEMBER 2020	JANUARY 2021	FEBRUARY 2021	MARCH 2021	APRIL 2021	MAY 2021
FORECAST				Machineries: Workers:	Machineries: 10 / 9 / 8 / 8 (excavators) Workers: 4	Machineries: 10/ 10/ 10/ 10 (excavators) Workers: 4		
ACTUAL				Machineries: 6 (excavators) Workers: 4	Current: Machineries: 7 / 7/ 7/ 0 Workers: 4	Current: Machineries: 10/ 13/ (excavators) Workers: 4		

Murmansk Wind Farm 201MW Week 100

Progress Crane Pads

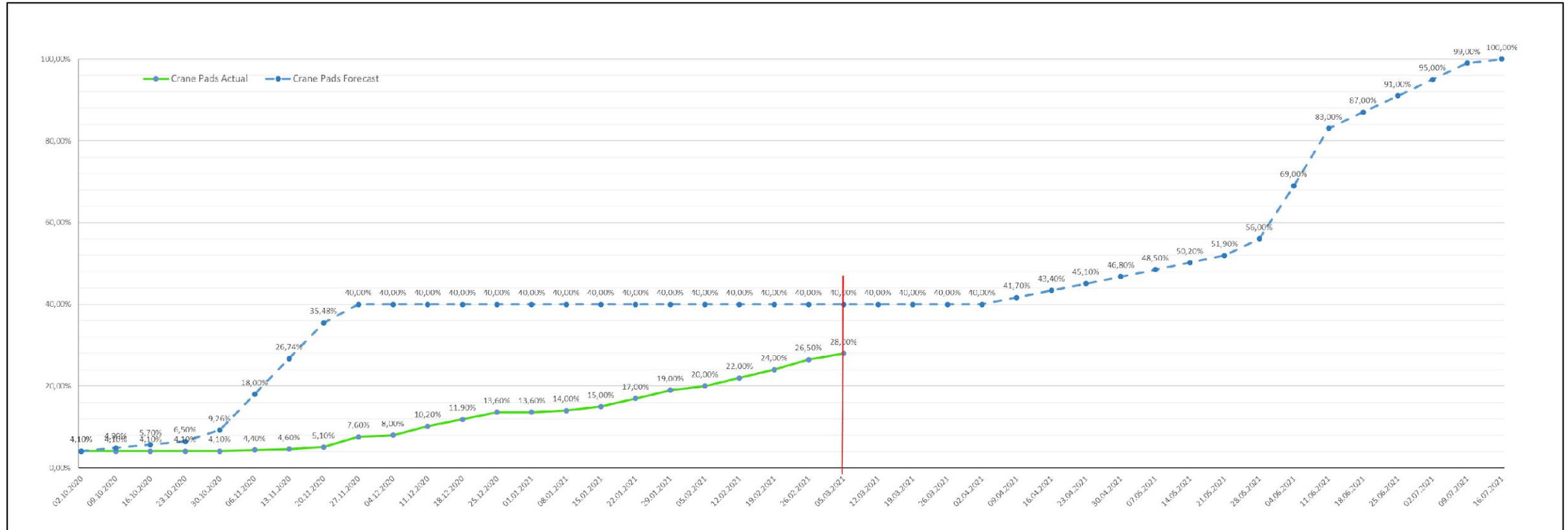


Crane Pads							
Execution	U.M.	Area Design	Area Done	Weekly Progress	Estimated date of completion	Contractual date	Area Done
Excavated	m3	86680,0	30436	1000	17.12.2021	01/07/2021	36%
Geogrid	m2	32859,0	8863	600	22.10.2021	07/07/2021	26,1%
C4 mix laying	m2	32859,0	8492	500	02.11.2021	07/07/2021	26,1%
Compaction test successful	m2	32859,0	0,0		n/a	15/07/21	0,0%
Completed Pads(groinding and foundation backfilling)	pcs	57	8	0			7%
Total Progress							26%

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Crane Pads Progress S-curve

UPDATE: 09.03.2021



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GROUNDING

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GROUNDING (CUMULATIVE)	JANUARY 2021	FEBRUARY 2021	MARCH 2021	1st half of APRIL 2021
CONTRACT	23	23	23	23
ACTUAL/FORECAST (*)		1 (Nº50 done without solenoids)	<p>15.03: 53, 54, 55, 56, 57, 49, 48, 47 (8 pcs) Fact: 53 (1 pcs) 54 – in work 55 – in work 56 – not provided by THM 57 – not provided by THM 49 – not provided by THM 48 – not provided by THM 47 – not provided by THM</p> <p>22.03: 46, 45, 44 (3 pcs) Fact cum.: 2 Target: 11 Target cum.: 12</p>	<p>10.04: 51, 52 (2 pcs) Target: 2 Target cum.: 14</p>
RECOVER REQUIRED AND AGREED DURING HLM				

grounding without solenoids

(*) n. 21 foundations done under Contract with CANTREVA

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GROUNDING

UPDATE: 11.03.2021



CRANE PADS	OCTOBER 2020	NOVEMBER 2020	DECEMBER 2020	JANUARY 2021	FEBRUARY 2021	MARCH 2021	APRIL 2021	MAY 2021
FORECAST						<i>Per day/night Workers:</i> 10/ 15/ 17/ 17		
ACTUAL						<i>Current:</i> <i>Per day/night Workers:</i> 10/ 15		

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Roads

ROADS (CUMULATIVE)	NOVEMBER 2020	DECEMBER 2020	JANUARY 2021	FEBRUARY 2021	MARCH 2021	1st half of APRIL 2021
CONTRACT	24,470 km completed up to final layer	24,470 km completed up to final layer	24,470 km completed up to final layer	24,470 km completed up to final layer	24,470 km completed up to final layer	24,470 km completed up to final layer
ACTUAL/FORECAST	0,6 km completed up to final layer	8 km in C4 2 km in C2	11,91 km in C4 4,17 km in C2	CW 5: 0 km (incl. C2) F-CW 5: 0 km (incl. C2) CW 6: 0,6 km (incl. C2) F-CW 6: 0,7km CW 7: 1,2 km (incl. C2) F-CW 6: 0,06 km CW 8: 1,2 km (incl. C2) F-CW 8: 0 km Target Feb: 15,83 km Actual Feb: 0,7km in C2 Total Cum.: 11,91 km in C4 and 4.93 km in C2	All in C2 15.03: 6,9 km / 4,3 km (38 st.15-30, 46 st.7-8, 41 st.0-8, 41 st.9-15, 47, 42, 43) Fact: 4,3 km (2,8 km – presented to Customer 1,5 km – in process of presentation) 22.03: 2 km / 4,6 km (38 st.0-15, 38 st.30-46, 46 st.0-7, 41 st. 8-9, 40) Fact target: 2,8 km Target: 8,9 km Fact cum.: 7,73 km Target cum.: 13,83	All in C2 10.04: 3,3 km Target: 3,3 km Target cum.: 17,13
RECOVER REQUIRED AND AGREED DURING HLM OF 08.12.2021		10 km + 2,2 km (Access 2) 100% completed up to final layer (C2 + C4)	16 km 100% completed up to final layer (C2 + C4)	20 km 100% completed up to final layer (C2 + C4)	13,83 km	17,13 km

ACTIONS & CRITICALITIES:

- Roads** – as minimum to achieve an overall cumulative of **20 km** fully completed (C2, C4 and tests)
- compaction, eventual sand and test must be completed within **March 2021** before WTGs components delivery to avoid unsustainable extra costs caused by construction delays
- unexpected swamps area and increase of m3 boulders with potential cost increase

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UPDATE: 11.03.2021



Roads – Workers and Machineries

ROADS	OCTOBER 2020	NOVEMBER 2020	DECEMBER 2020	JANUARY 2021	FEBRUARY 2021	MARCH 2021	APRIL 2021	MAY 2021
FORECAST				Machineries: Workers:	Machineries: 17 / 21 / 24 / 30 (excavators) Workers: 15	Machineries: 17/ 17/ 17/ 17 (excavators) Workers: 14		
ACTUAL				Machineries: 16 (excavators) Workers: 4	Current: Machineries: 17 / 19 / 17/ 0 (excavators) Workers: 14	Current: Machineries: 17/ 14 (excavators) Workers: 14		

Murmansk Wind Farm 201MW Week 100

Progress Roads

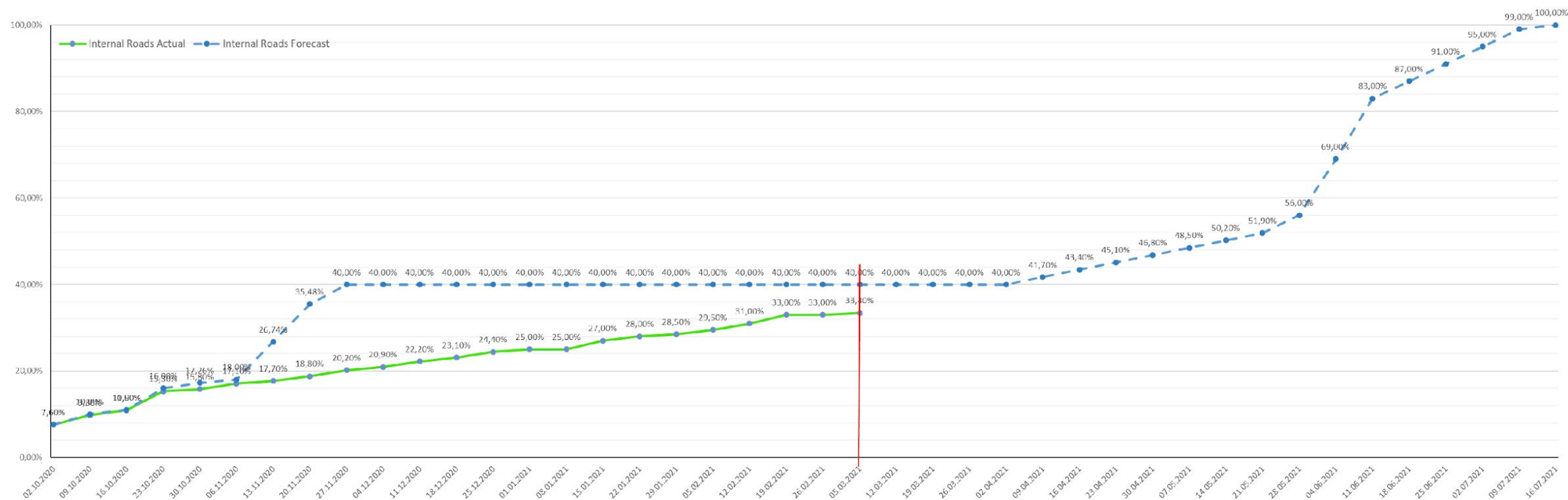


Roads Construction (58,6 km)								
Execution		Length Design	Length fact	Length Done	Weekly Progress m	Estimated date of completion	Contractual date	Total %
Top soil rem.	m	54657	46377	39581	0	18/04/21	01/11/2020	85,2%
Swamp removal	m	3995	12254	9837	0	21/02/21	01/11/2020	80%
Swamp filling	m	3995	12254	9837	0	21/02/21	01/11/2020	80%
Sub base	m	58652	58652	17274	0	23/04/22	-	29,4%
Geogrid	m	58652	58652	12537	0	18/07/21	-	21,4%
C4 mix laying	m	58652	58652	12537	0	05.01.2022	-	21,4%
C2 mix laying	m	58652	58652	4930	0	04.06.2023	15/07/21	9,3%
CULVERTS	pcs	91	91	14	2	15.11.2023	15/07/21	13,1%
Total Progress								33%

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Roads Progress S-curve

UPDATE: 05.03.2021



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MV/FO Installation

UPDATE: 11.03.2021



MV/FO INSTALLATION (CUMULATIVE)	OCTOBER 2020	NOVEMBER 2020	DECEMBER 2020	JANUARY 2021	FEBRUARY 2021	MARCH 2021	1st half of APRIL 2021
CONTRACT	MV/FO Collectors n. 4, n. 5, n. 6 (47,031 km)	MV/FO Collectors n. 4, n. 5, n. 6 (47,031 km)	MV/FO Collectors n. 4, n. 5, n. 6 (47,031 km)	MV/FO Collectors n. 4, n. 5, n. 6 (47,031 km)	MV/FO Collectors n. 4, n. 5, n. 6 (47,031 km)	MV/FO Collectors n. 4, n. 5, n. 6 (47,031 km)	MV/FO Collectors n. 4, n. 5, n. 6 (47,031 km)
ACTUAL/FORECAST	0 km	0,8 km	2,7 km	4,485 km	CW 5: 1,2 km F-CW 5: 1,2 km CW 6: 0 km F-CW 6: 0 CW 7: 1,4 km F-CW 7: 0 CW 8: 1,5 km F-CW 8: 0 Target Feb: 8,515 km Actual Feb: 1,2 km in full Total Cum.: 5,7 km in full	Cable entries (foundation conduits) 15.03: 53, 54, 55, 56, 57, 49, 48, 47 (8 pcs) Fact: 53 – not provided by THM (cable channels) 54 – in work 55 – not provided by THM (cable channels) 56 – not provided by THM 57 – not provided by THM 49 – not provided by THM 48 – not provided by THM 47 – not provided by THM 22.03: 46, 45, 44 (3 pcs) Fact cum.: 0 Target: 11 Target cum.: 11	Cable entries (foundation conduits) 10.04: 50, 51, 52 (3 pcs) Target: 3 Target cum.: 14
RECOVER REQUIRED AND AGREED DURING HLM OF 09.12.2021			3 km	9 km	13 km	11 pcs	14 pcs

ACTIONS & CRITICALITIES:

- Updated Recovery Plan by NG within **03.02.2020** including interferences
- MV/FO works** – NG informed that on **04.02** the subcontractor will be on Site for a survey and they will start the works at full regime within **18.02**; NG commits to complete in February 2021 as minimum **13 km** fully completed (trenches and cables)
- WTG Foundations GROUNDING**. For 16/02 – 1 b. 2nd – 17/02. 3rd b – 20/02. NG will inform about 4th brigade 17/02

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UPDATE: 11.03.2021



MV/FO Installation – Workers and Machineries

MV/FO INSTALL.	OCTOBER 2020	NOVEMBER 2020	DECEMBER 2020	JANUARY 2021	FEBRUARY 2021	MARCH 2021	APRIL 2021	MAY 2021
FORECAST				Machineries: Workers:	Machineries: 2 / 2 / 2 / 3 (excavators) Workers: 40	Machineries: 2 / 2 / 2 / 2 (excavators) Workers: 10		
ACTUAL				Machineries: 2 (excavators) Workers: 20	Current: Machineries: 2 / 2 / (excavators) Workers: 20	Current: Machineries: 2 / 1 (excavators) Workers: 10		

Murmansk Wind Farm 201MW Week 100

Progress MV/FO Cables

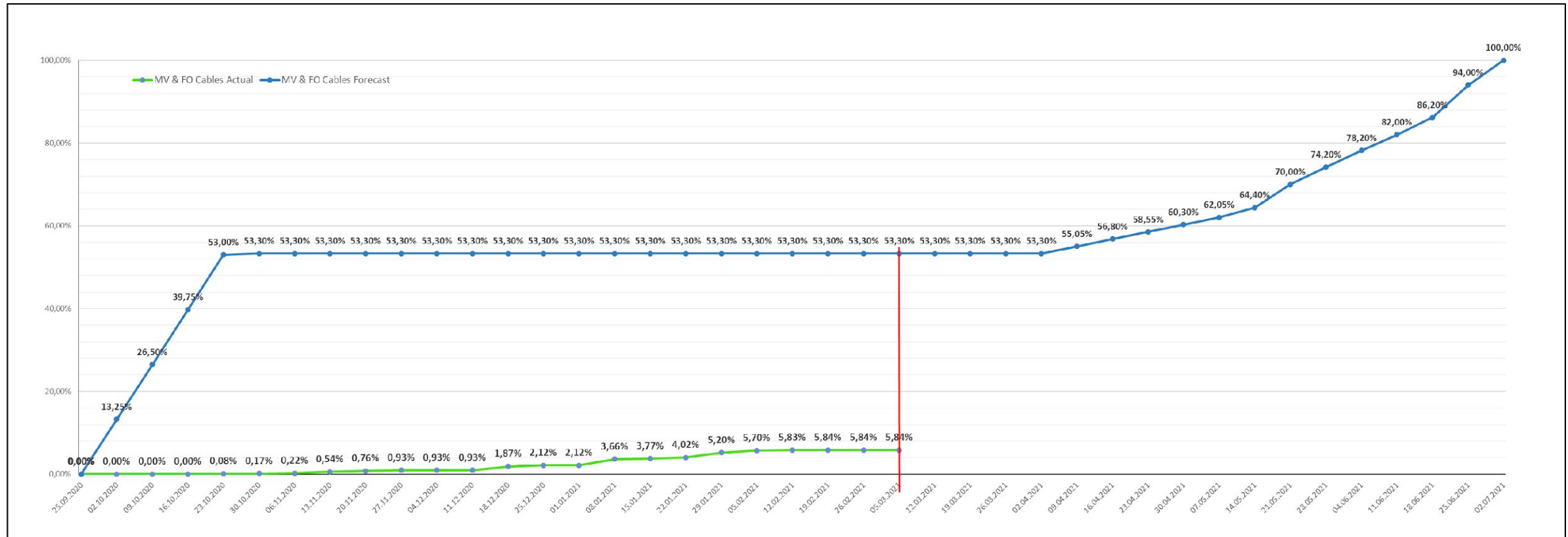


MV/FO Cables							
Execution	Scope Design	U.M.	Scope Done	Weekly Progress	Estimated date of completion	Contractual date	%
Excavated	88196	m	7800	0	17.03.2023	-	8,8%
Cable Pulling	88196	m	5700	0	05.09.2022	30/06/21	5,8%
Backfilling	88196	M	5700	0		30/06/21	5,8%
Foundation conduits (cable pulling)	57	pcs	0	0			0%
Total Progress							5,84%

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MV/FO Installation Progress S-curve

UPDATE: 05.03.2021



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T-Line

UPDATE: 11.03.2021



T-LINE (CUMULATIVE)	OCTOBER 2020	NOVEMBER 2020	DECEMBER 2020	JANUARY 2021	FEBRUARY 2021	MARCH 2021
CONTRACT	74 foundations 26 pylons 15 km wire & ground wire	99 foundations 56 pylons 20 km wire & ground wire	112 foundations 84 pylons 25km wire & ground wire	125 foundations 112 pylons 30 km wire & ground wire	153 foundations 140 pylons 35 km wire & ground wire	196 foundations 180 pylons 40 km wire & ground wire
ACTUAL/FORECAST (*)	34 foundations 0 pylons 0 wire & ground wire	53 foundations 11 pylons 0 wire & ground wire	71 foundations 33 pylons 4 pcs ground.	83 foundations 48 pylons 10 pcs ground.	CW 5: 10f / 14p / 11g F-CW 5: 4f / 5p / 7g CW 6: 10f / 14p / 12g F-CW 6: 2f / 6p / 6g CW 7: 16f / 22p / 16g F-CW 7: 3f / 7p / 5g CW 8: 16f / 23p / 16g F-CW 8: 4f / 1p / 0g Fact Feb: 13f / 19p / 18g Target Feb: 52f / 73p / 55g Fact Cum.: 96f / 67p / 28g	CW9: 2f / 5p / 3g F: 2f / 5p / 3g CW10: 6f / 6p / 6g F: 3f / 4p / 5g CW11: 12f / 9p / 8g CW12: 12f / 10p / 8g Fact March: 5f / 9p / 8g Target March: 32f / 30p / 25g Fact cum.: 101f / 76p / 36g Target cum.: 128f / 97p / 53g
RECOVER REQUIRED AND AGREED DURING HLM OF 08.12.2021			85 foundations 45 pylons 0 km wire & 15 pcs grounding	105 foundations 70 pylons 0 km wire & 35 pcs grounding	135 foundations 121 pylons 15 km wire & 65 pcs grounding	128 foundations 97 pylons 53 pcs grounding

ACTIONS & CRITICALITIES:

1. NG confirm to add ~~at least 6/7 additional brigades plus a subcontractor within 10.02~~ within CW7 subcontractor will arrive with 2 brigades , + 2br on CW8.
2. NG confirms that materials are fully purchased and there are **not problems of delivery of materials on Site**

(*) n. 21 foundations done under Contract with CANTREVA

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UPDATE: 11.03.2021



T-Line – Workers and Machineries

T-LINE	OCTOBER 2020	NOVEMBER 2020	DECEMBER 2020	JANUARY 2021	FEBRUARY 2021	MARCH 2021	APRIL 2021	MAY 2021
FORECAST				Machineries: Workers:	Machineries: 25 (12 excavators, 6 dozers, 7 cranes) Workers: 67	Machineries: 25 (12 excavators, 6 dozers, 7 cranes) Workers: 67		
ACTUAL				Machineries: 20 (10 excavators, 5 dozers, 5 cranes) Workers: 47	Current: Machineries: 19 (9 excavators, 5 dozers, 5 cranes) Workers: 55	Current: Machineries: 18 (10 (7) excavators, 4 dozers, 4 cranes) Workers: 42		

Murmansk Wind Farm 201MW WCR– Week 100

Progress T-line

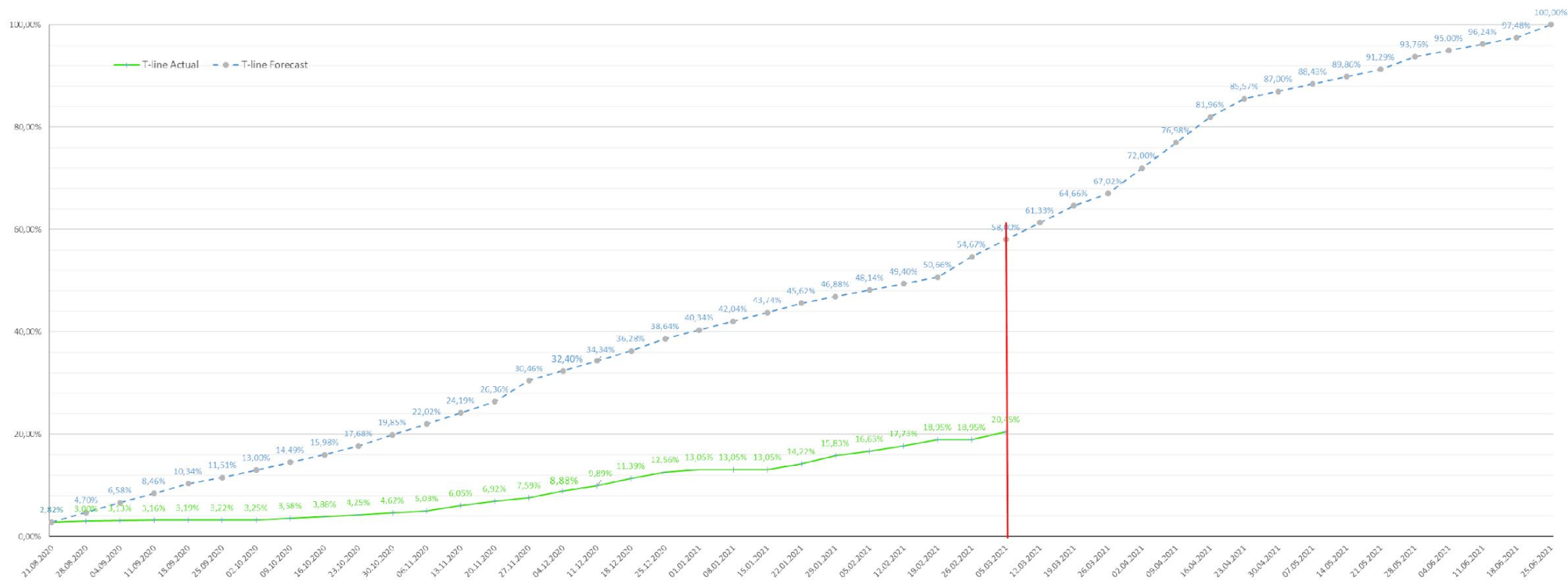


T-line 150kV							
Execution	Unit	Scope Design	Scope Done	Weekly Progress	Estimated date of completion	Contractual date	%
Marking out	pcs	262	116,00	6,00	08.12.2021	-	41,98%
Right-of-Way Clearance	unit	262,00	107,92	0	14.11.2021	11/06/21	41,19%
Deforestation	ha	259,2	145,2	0	28.04.2021	11/06/21	56%
Excavation	pcs	1048	413	32	17.09.2021	04/05/2021	36,5%
Crushed-stone bed	pcs	1048	404	32	14.09.2021	04/05/2021	35,50%
Installation of foundation	pcs	1048	404	32	07.09.2021	05/05/21	35,50%
Earthing	pcs	262	33	8	20.02.2022	11/06/21	10,1%
Backfilling	pcs	1048	398	32	16.09.2021	07/05/21	35%
Preassembling of tower	pcs	262	86	12	15.08.2021	-	28,28%
Erection of tower	pcs	262	72	10	22.08.2021	03/06/21	23,66%
Accessories	pcs	264	0		n/a	11/06/21	0,00%
OPGW	m	68978	0		n/a	11/06/21	0,00%
AC	m	68978	0		n/a	11/06/21	0,00%
Total Progress							20,45%

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T-Line Progress S-curve

UPDATE: 05.03.2021



(*) n. 21 foundations done under Contract with CANTREVA



Back Up

Kola Project

Problems with temperature & road closure resulting in suspension of works



21.02.2021	-37C
22.02.2021	-37C
23.02.2021	Road closure
24.02.2021	Road closure
25.02.2021	Road closure
26.02.2021	Road closure
27.02.2021	Road closure till 15:00
28.02.2021	Road closure since 20:00
01.03.2021	Road closure till 10:00
02.03.2021	Road closure since 05:00
03.03.2021	Road closure
06.03.2021	Road closure since 12:00
07.03.2021	Road closure till 09:00
10.03.2021	Road closure since 22:00
11.03.2021	Road closure