CONTINUOUS LINEAR PULLER

A HIGHLY EFFICIENT RECONDUCTORING PROCESS

cigre Canada

2022 CIGRE CANADA CONFERENCE & EXPOSITION

ATCO™

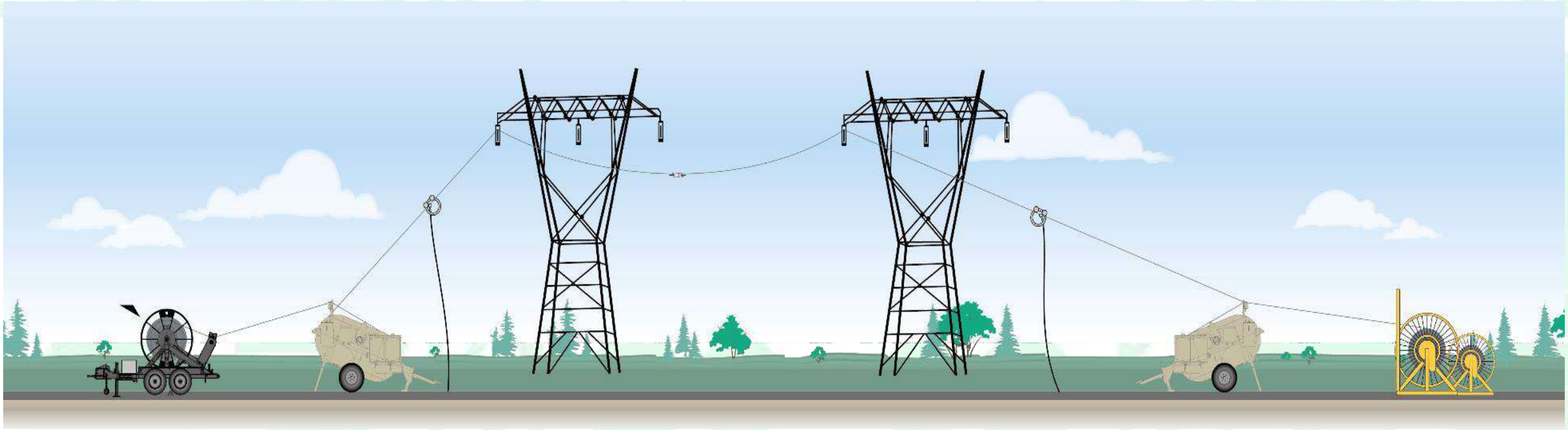
CHALLENGING TIMES PROVIDED BY THE INDUSTRY

TSO/DNO's RESTRICTIONS

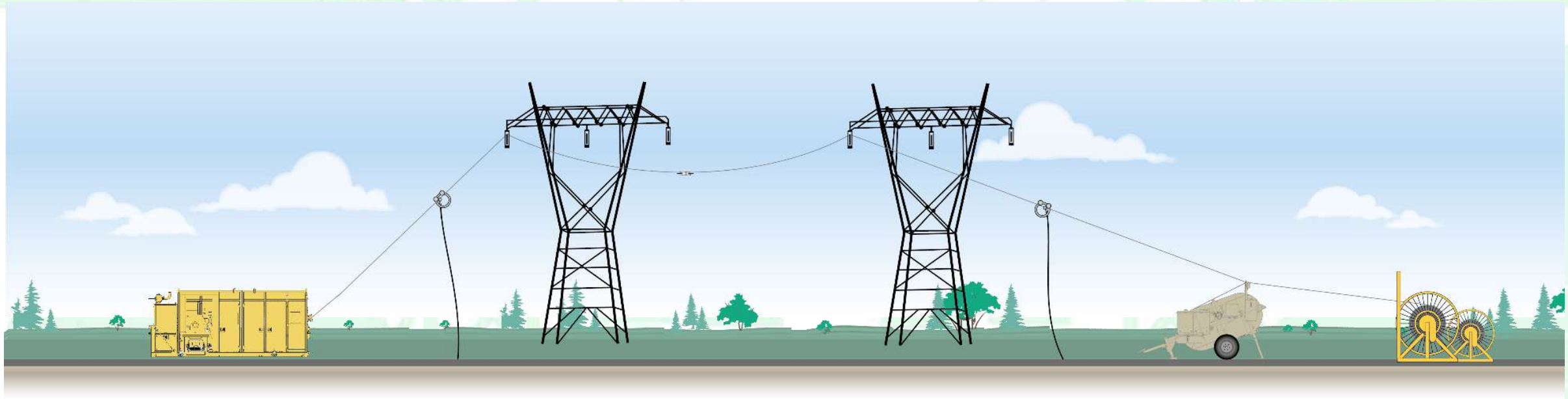
- EMERGENCY RETURN TO SERVICE (ERTS), OUTAGES
- ACCESS TO PROPERTY/LANDOWNER RIGHTS
- LARGER DIAMETER CONDUCTOR TO RESOLVE UPGRADES/CHANGE IN CONFIGURATION (REMOVING QUAD OR TWIN)
- ADJACENT ENERGIZED CIRCUITS AND RELTED SAFETY ISSUES

BIG EMPHASIS ON TARGETING IMPROVEMENTS AND EFFICIENCIES

STANDARD RECONDUCTORING PROCESS



RECONDUCTORING PROCESS WITH CLP



Conductor cut by CLP

Midspan joint cut by CLP

COMPARISON

STANDARD RECONDUCTORING PROCESS

1. ATTACHING A NEW CONDUCTOR TO THE EXISTING CONDUCTOR
2. PLACING CONDUCTOR TRAVELLERS AT EACH INTERMEDIATE STRUCTURE
3. WINCHING IN THE EXISTING CONDUCTOR AND COILING IT ONTO AN OLD DRUM
4. REPLACING EVERY JOINTS WITH TEMPORARY CONNECTORS KEEPING THE TENSION
5. TRANSPORTING EXISTING CONDUCTOR ONTO DRUMS TO A RECYCLING DEPOT

RECONDUCTORING PROCESS WITH CLP

1. ATTACHING A NEW CONDUCTOR TO THE EXISTING CONDUCTOR
2. PLACING CONDUCTOR TRAVELLERS AT EACH INTERMEDIATE STRUCTURE
3. WINCHING IN THE EXISTING CONDUCTOR AND CUTTING IT WITH CLP

✓

4. TRANSPORTING THE CONTAINER WITH THE CONDUCTOR PIECES TO A RECYCLING DEPOT

«FOUR MACHINES IN ONE» CONCEPT

CUTTING MODULE

MOTORIZED CONVEYOR

PULLING MODULE

AUXILIARY WINCH

MAX PULL	MAX SPEED	MAX CONDUCTOR	MAX JOINT
50 kN	3 km/h	40 mm	40 mm

SAFER FASTER

CHEAPER GREEN

VALUE PROPOSITION

SAFER

- NO MORE WORKING AT HEIGHT
- MINIMIZE RISK OF SLIPS, FALLS & ELECTROSTATIC CHARGES

GREEN

- LESS EQUIPMENTS ON SITE
- LESS NOISE & AIR POLLUTION
- FUEL CONSUMPTION REDUCTION

FASTER & CHEAPER

- LESS PERSONNEL ON PULLER SITE
- EASY TRANSPORTATION
- TIME REDUCTION ON THE JOBSITE
- OUTAGE REDUCTION

CASE STUDY

50 KM SINGLE LINE | **80 MID-SPAN JOINTS** | **30 ANCHORING BY-PASS JOINTS**

120 DAYS
STANDARD OUTAGE PERIOD

30% IN PULLING OPERATIONS

6% SET UP/STRIP DOWN OPERATIONS AT PULLER SITE

RESOURCES ON PULLER SITE

86 DAYS
OUTAGE PERIOD WITH CLP

6% IN PULLING OPERATIONS

2% SET UP/STRIP DOWN OPERATIONS AT PULLER SITE

RESOURCES ON PULLER SITE

20% COST SAVING

28% TIME SAVING

ON SITE

CLP FIRST DEMO

NATIONAL GRID ACADEMY
- EAKRING, UK

ON SITE

CLP FIRST JOBSITE

MICHIGAN CITY, INDIANA, US

APPLICATION: RECONDUCTORING

SERVICE/ASSISTANCE SUPPLIED: TRAINING, SERVICE AND PRODUCT UPDATES

PROJECT: MICHIGAN CITY – BOSSERMAN RECONDUCTOR

TYPE OF LINE:

TRANSMISSION

PROJECT LENGTH:

11MI (17KM) **SPAN**

LENGTH: 1,000FT

(300M) **VOLTAGE:**

138KV

Nr CONDUCTORS PER PHASE: 1

CONDUCTOR TYPE: 397ACSR WRECKING OUT, 1530 PULLING IN

ON SITE

WHITEFIELD, NEW HAMPSHIRE, US

APPLICATION: RECONDUCTORING

SERVICE/ASSISTANCE SUPPLIED: TRAINING, SERVICE AND PRODUCT UPDATES

TYPE OF LINE: STATIC REMOVED, OPGW PULLED IN

PROJECT LENGTH: 26 MILES

SPAN LENGTH: 500FT

VOLTAGE: OPGW

N CONDUCTORS: 2 OPGW

CONDUCTOR TYPE: OPGW 5/8IN

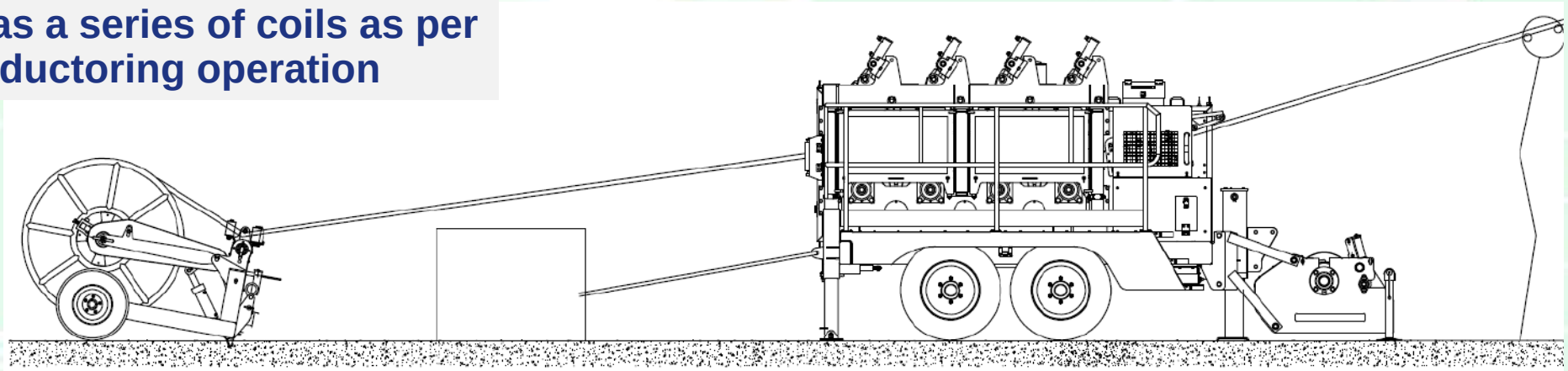
CONTINUOUS LINEAR PULLER «LIGHT»

Pulling module from the CLP implemented in a traditional machine layout (no cutting & conveyor)

Working solution similar to the traditional puller-tensioner stringing machines

It allows the continuous pull of the old conductor without stops when mid span or repair joints arrive in front of the machine

The old conductor is then wound in a traditional reel-winder and scraped as a series of coils as per the traditional reconductoring operation



FROM CONTINUOUS LINEAR PULLER TO CONTINUOUS PULLING SYSTEM

THE CLP MACHINE CAN BE COMPLIMENTED BY DEDICATED ITEMS TO POTENTIALLY INTRODUCE FURTHER ADVANCEMENTS FROM THE CONVENTIONAL PULLING SYSTEM

ADJUSTABLE ARRAY ROLLER

NO REQUIREMENT TO LIFT CONDUCTORS DURING CLIPPING IN

COMBINED TEMPORARY SWIVEL & CONNECTOR

COMPRESSED SINGLE STAGE FITTING

MORE ITEMS UNDER EVOLUTION AND FEASIBILITY STAGE

THANKS FOR YOUR ATTENTION