APEX Summit 2024

SWER Network Development Strategy

By Matt Crawley

Marlborough Lines

SWER

Marlborough Lines SWER
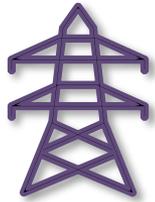
540 km
34x Networks

1960s – 1970s
Lifetime of 60 yrs

Single Conductor
Long Spans

Earthing Problems
Low Capacity

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The Problem

The Problem

2034

Isolating SWER Sub Current Rating

I

d

Tx

The Problem

2044

Isolating SWER Sub Current Rating

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Tx

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The Problem

The Problem

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The Problem

2074

Isolating SWER Sub Current Rating

The Problem

2084

Isolating SWER Sub Current Rating
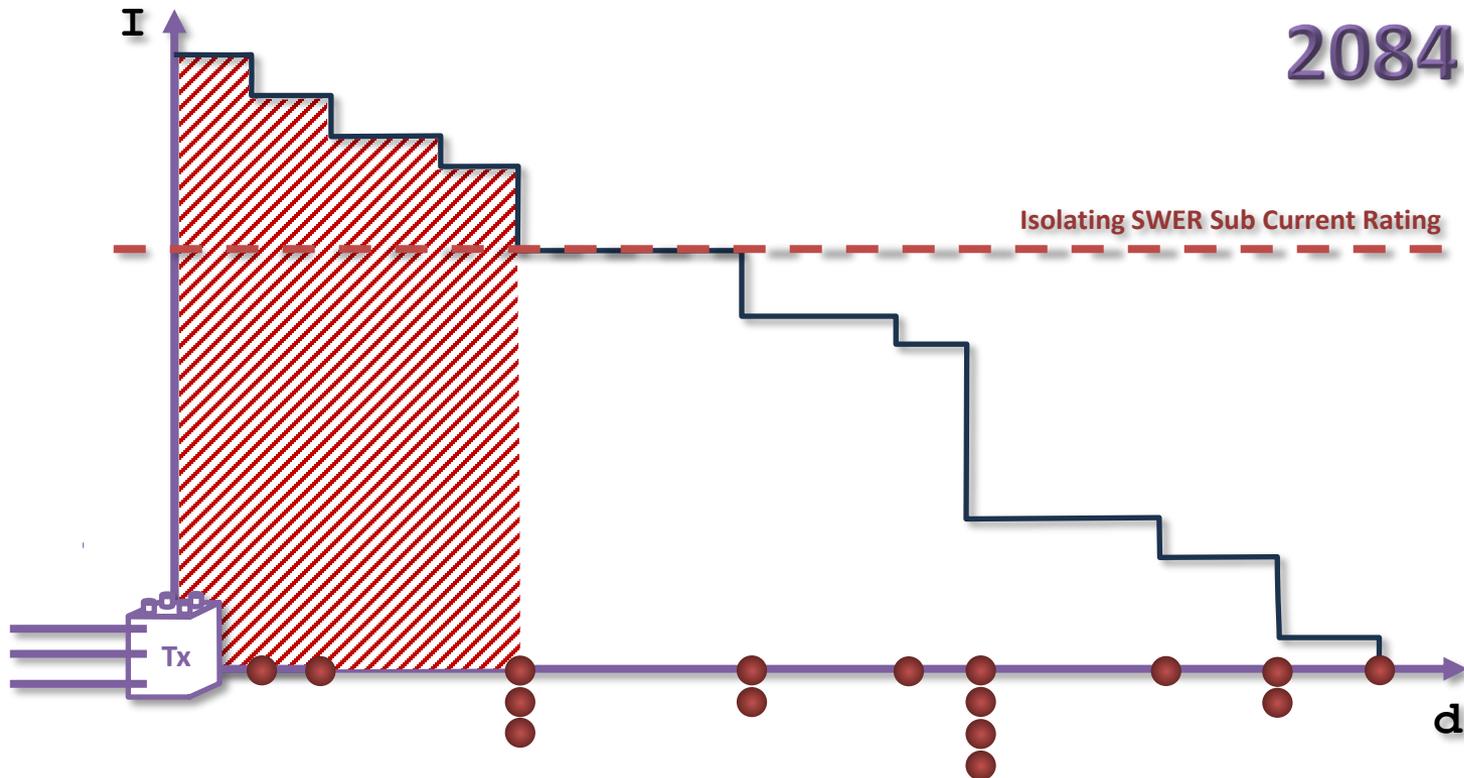
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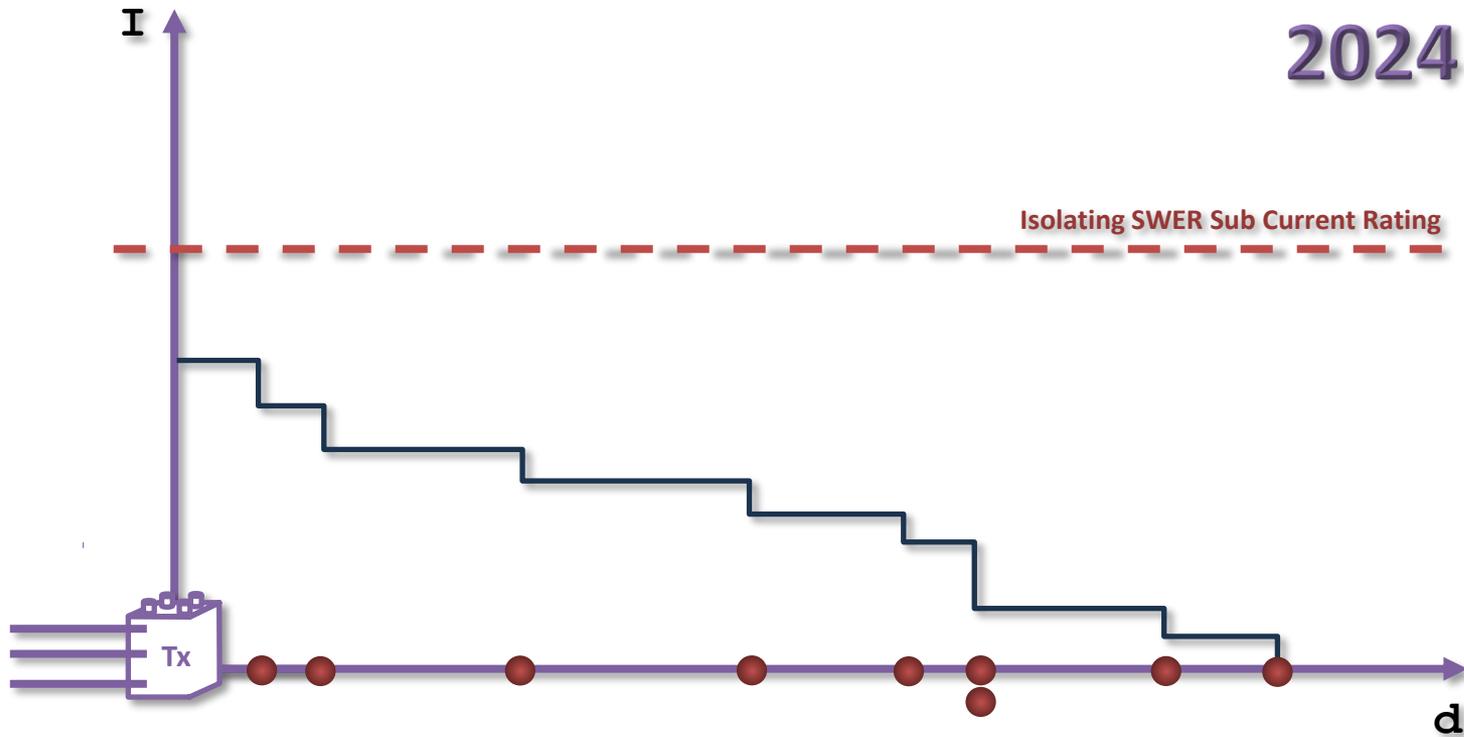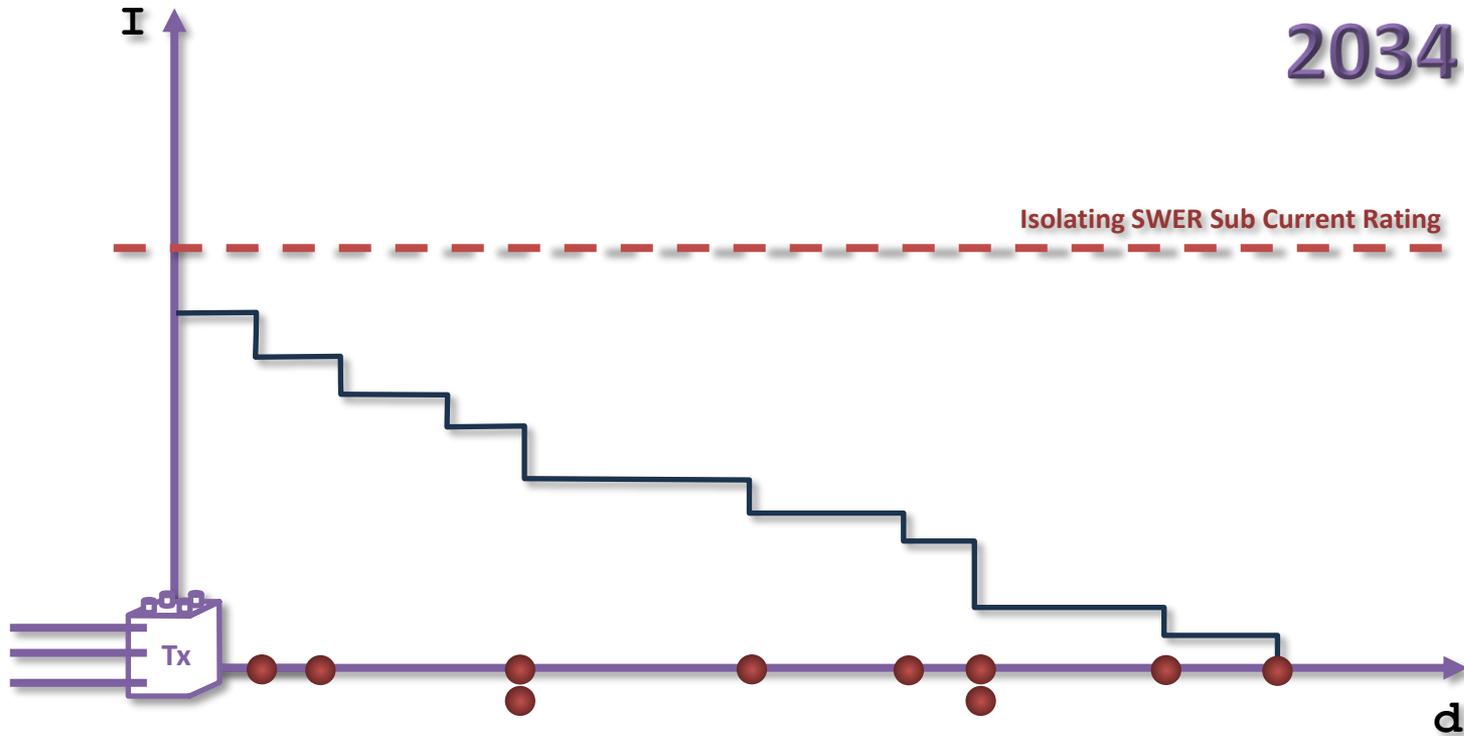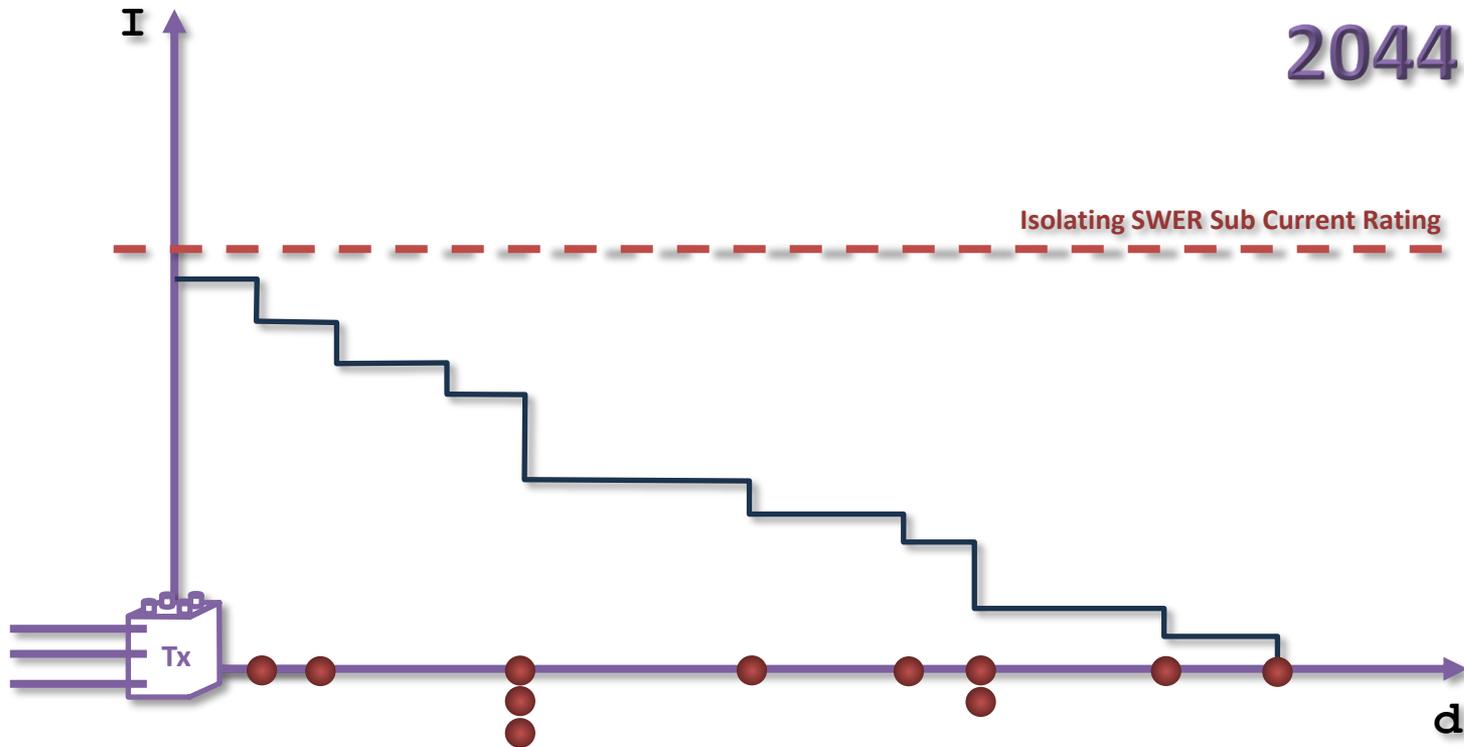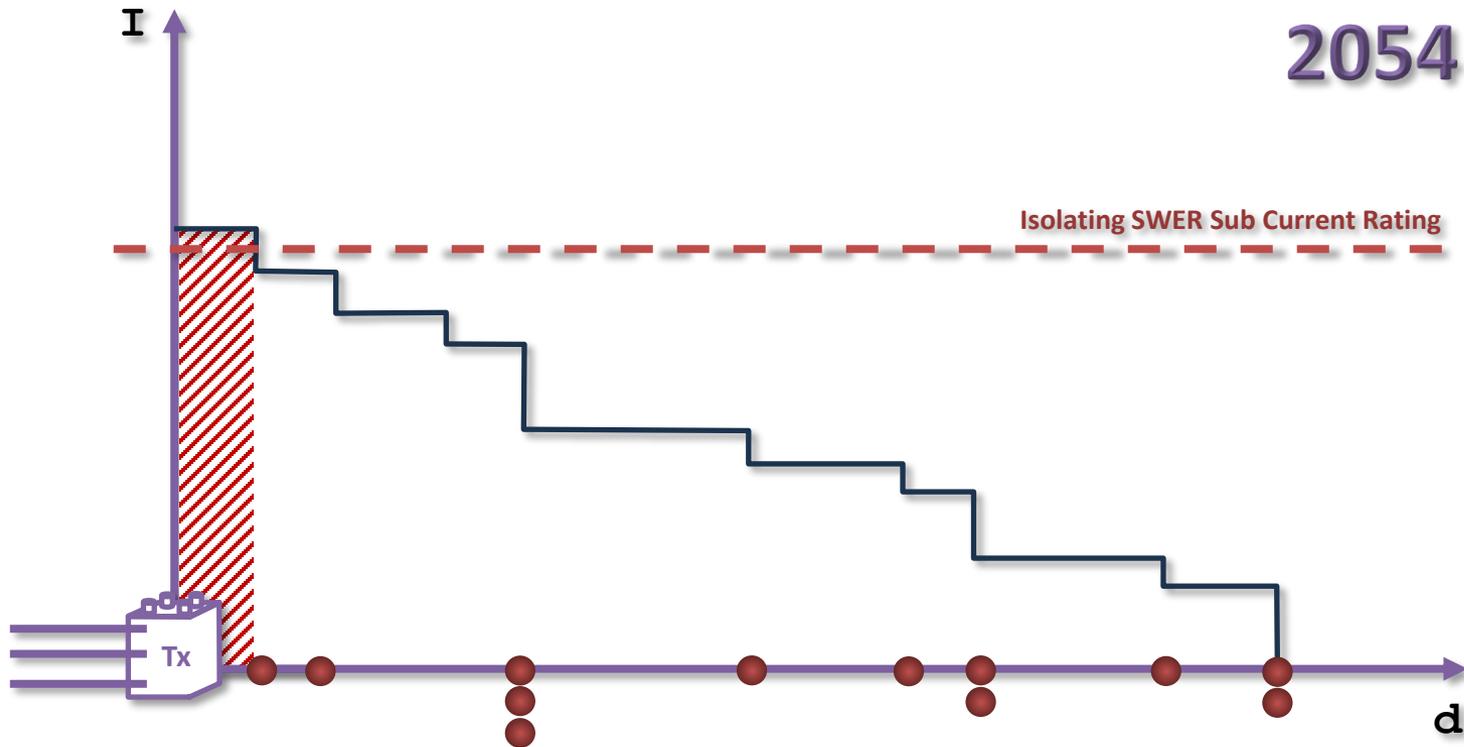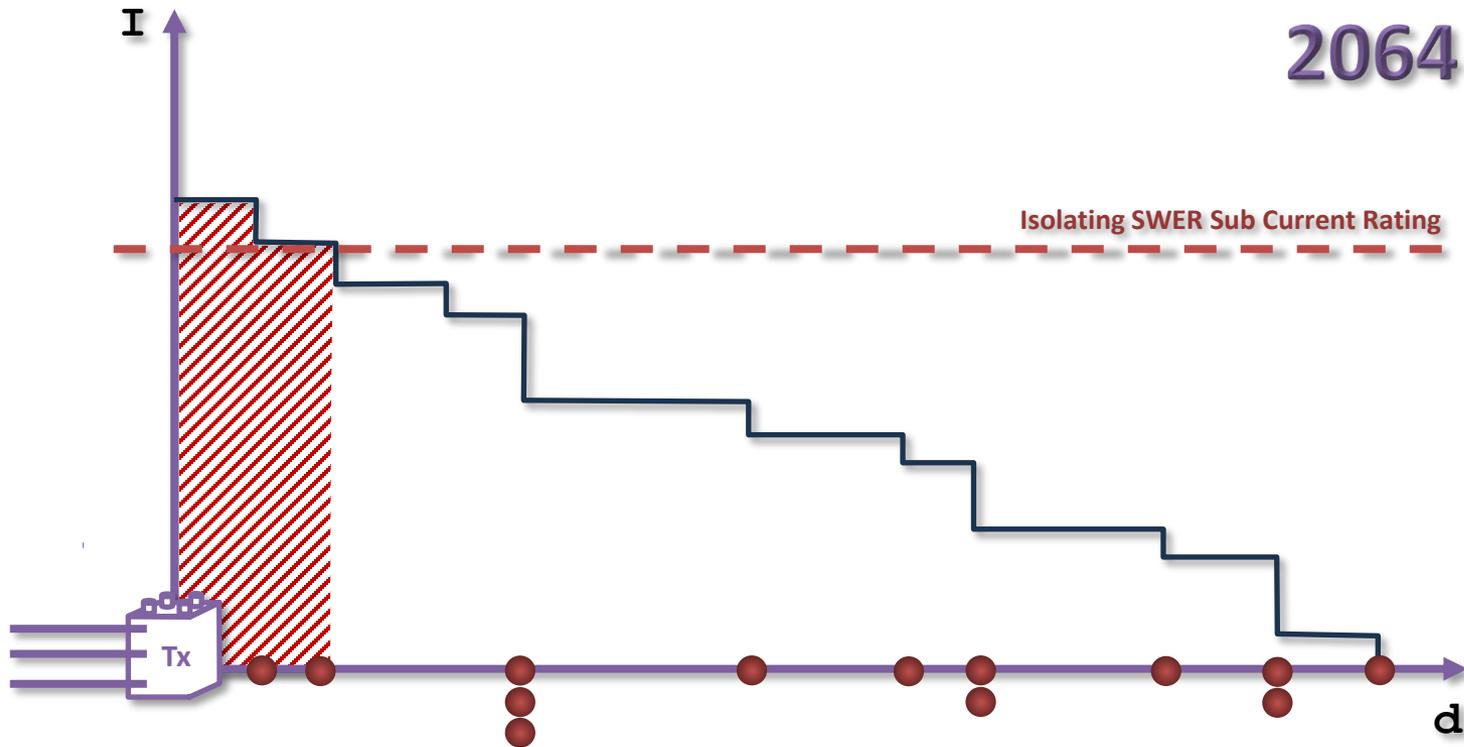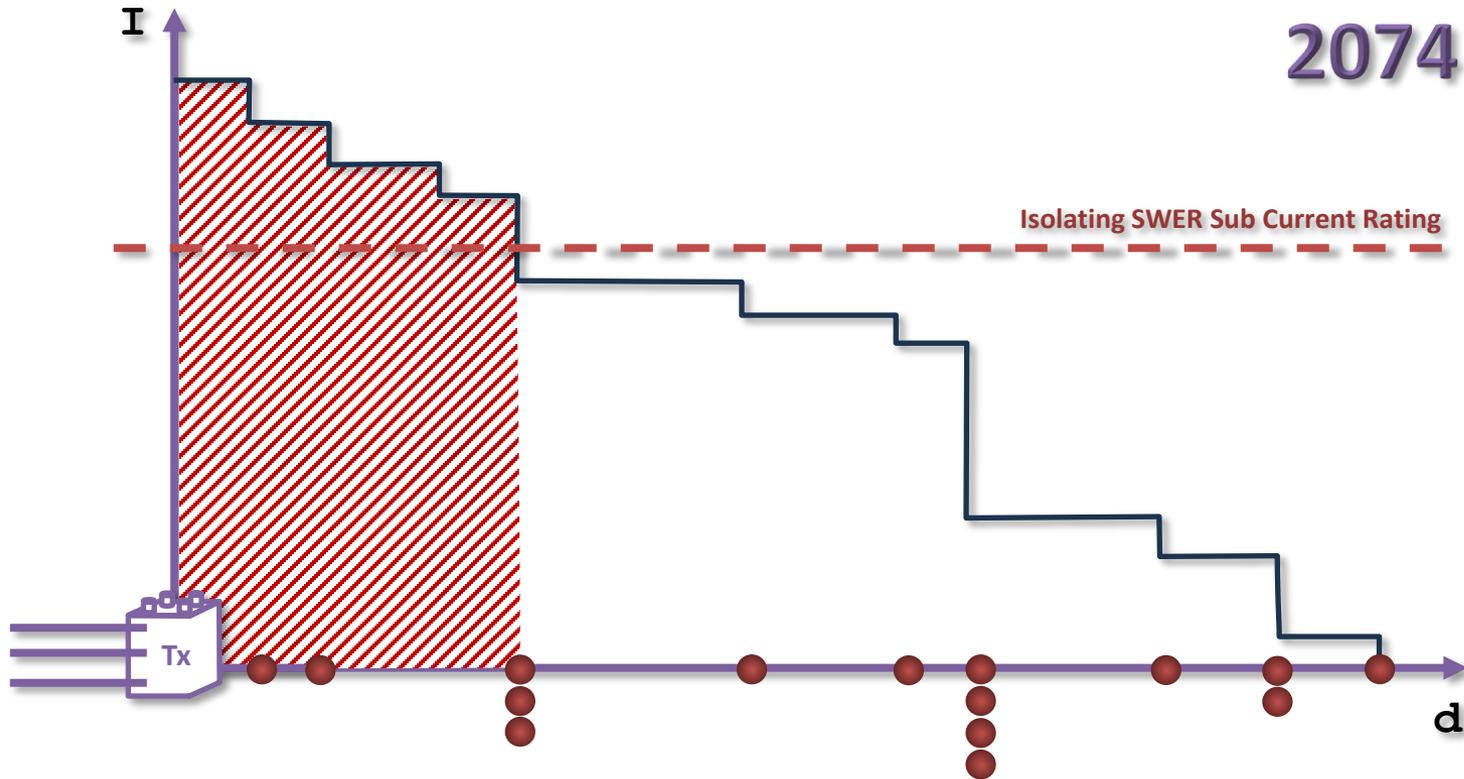
More Problems

Increase in EV fleet share
Charging during holiday weekends
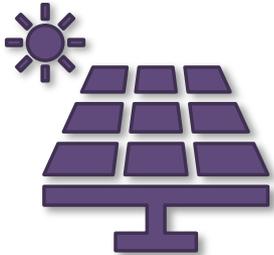
Increase in distributed generation
Rarely on holiday homes
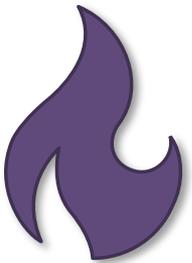
"We assume the phase out begins in 2030. We also assume that no further fossil gas connections to the grid, or bottled LPG connections, occur after 2025... to be on track for a complete transition away from using fossil gas in buildings by 2050"
pg 111 Climate Change Commission's Report (2021)

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The Process

Network Metrics

Capacity
Distance to Town

Number
Per km of SWER

Load Data

Age

Other Considerations

Development Potential

Denied Connections

f(x) = **Upgrade Need Index**

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The Results
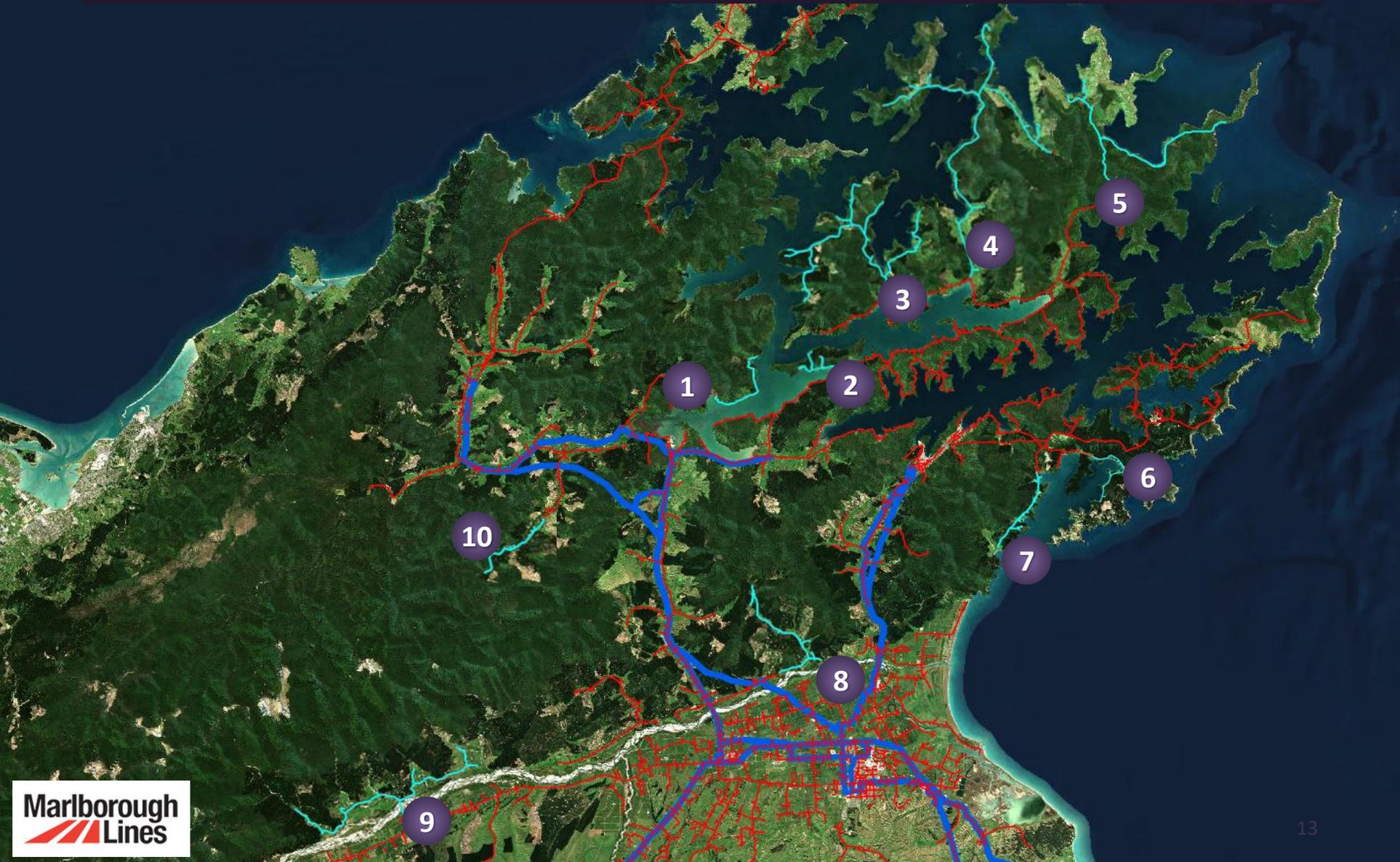
Recommended Developments

Extend single phase

Recommended Developments

Extend single phase

Extend three phase

Recommended Developments

Extend single phase

Extend three phase

Upgrade isolating transformer

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Recommended Developments

Extend single phase

Extend three phase

Upgrade isolating transformer

Upgrade entire SWER network

Recommended Developments

Extend single phase

Extend three phase

Upgrade isolating transformer

Upgrade entire SWER network

Replace SWER poles as needed with stronger poles

Recommended Developments

Extend single phase

Extend three phase

Upgrade isolating transformer

Upgrade entire SWER network

Replace SWER poles as needed with stronger poles

Replacements to be like-for-like

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Recommended Developments

Extend single phase

Extend three phase

Upgrade isolating transformer

Upgrade entire SWER network

Replace SWER poles as needed with stronger poles

Replacements to be like-for-like

Encourage removal of connections

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Learnings

Collect lots of data!

Consider its significance

Think long-term

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Questions?