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COST ASSESSMENT WORKING GROUP 7

13th March 2019 - CAWG

WALES&WEST UTILITIES

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Models overview

Microsoft Excel Worksheet

Regression	Activities in these	Regression driver	Driver observations	R2	Frontier network	WWU position (Out of 8)	WWU saving to get to Upper Quartile £m	WWU average annual spend £m (14–18)	WWU % change in costs to be Upper Quartile	Overall Output result Frontier GDN	8th position	8th position saving to get to UQ £m	8th position average annual spend £m	8th position % change in costs to be Upper Quartile	Comments
Totex	All controllable costs	MEAV (40%), Repex Synthetic cost (40%), Connections synthetic costs (2%), Reinforcement synthetic cost (2%), external condition reports (10%), Maintenance MEAV (10%) and Emergency regressed weighting (10%)	MEAV weighting too high, assumes all networks are the same condition, mix of weightings don't have any correlation to spend and workloads	0.65	NGN	6	-£21	£219	10%		London	-£37	£257	14%	London in lower quartile for all model scores even when adjusted for regional factors
Opex	Leakage, emergency, maintenance, etc...	MEAV (56.5%), External condition reports (14.4%), Emergency regressed weighting (15.7%) and Maintenance MEAV (13.4%).	Meav not the driver of all the costs in Opex, no consideration for fixed overheads	0.66	Southern	4	-£4	£91	4%		East of England	-£52	£164	32%	High meav for southern based on asset count compared to EoE
Capex	Connections, Network management, IT and vehicles etc...	Top down - MEAV (80%), connections SC (10%) and Reinforcement SC (10%)	Connections more than 10% of annual spend, yet MEAV is higher weighting. No consideration for Other Capex items. Again MEAV assumes all Networks are in the same condition.	0.56	West Midlands	8	-£22	£51	43%		WWU	-£22	£51	43%	WWU has 60% more connections than WM and overall 65% more costs across Capex - yet the driver is only worth 10%
Repex	Mains replacement, relay following escape, LTS diversions	Standardised Synthetic unit cost	Risk of cherry picking with issues in allocation inconsistencies. Does not reflect economies of scale issues.	0.65	NGN	4	-£2	£78	3%		London	-£9	£112	3%	London unit costs on average 30% more. Regional factors are applied for comparison so still inefficient
Work Management	Asset Management, System Operations, Customer management and Operations management	MEAV	None of the departments included in WM are driven by asset replacement.	0.23	Scotland	4	-£2	£22	7%		East of England	-£15	£39	37%	both low Meav scores but Scotland has 45% less costs - 75% less operations management
Repairs	Mains repairs and rechecks	Number of external condition reports	This does not pick up the issues with no of repairs or intervention type which could have different cost	0.79	West Midlands	2	£0	£10	-2%		Southern	-£7	£20	34%	WM has perfect delivery set up with regards to region and ring main and high reports
Emergency	PRE's	Number of customers (80%) and External condition reports (20%)	Does not consider 24/7 operation, only the calls we receive.	0.67	Scotland	3	-£1	£10	5%		North West	-£8	£13	63%	NW has double the costs but only 35% difference in workloads
Maintenance	Network services maintenance, call outs, faults, cuts offs, Alters and any 'other operational activities'	Maintenance MEAV	MEAV assumes all assets are in the same condition. Does not consider type of asset or maintenance regimes.	0.72	Southern	4	-£2	£17	11%		North West	-£6	£17	34%	High meav for southern based on asset count compared to NW yet NW has 30% more costs
Connections	Mains and services	Standardised Synthetic cost	Risk of cherry picking with issues in allocation inconsistencies. Does not reflect economies of scale issues.	0.63	Scotland	7	-£2	£12	17%		East of England	-£6	£13	41%	Scotland has 60% less costs and only 20% less workload, EoE has high unit costs for services
Mains	All Reinforcement	Standardised Synthetic cost	Risk of cherry picking with issues in allocation inconsistencies. Does not reflect economies of scale issues.	0.59	West Midlands	7	-£1	£4	33%		London	-£3	£5	53%	High London cost in 2017/18 year more than 7m more than average of 1st 4 years

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Alternative comparisons

Actuals and workoad 2014-2018									
	Cost Driver	NGN	WWU	Cadent - WM	Cadent - NW	Cadent - EoE	Cadent - Lon	SGN - So	SGN - Sc
Emergency	£ per No. of PRE's	5	4	3	6	7	8	2	1
Repair	£ per No. of Repairs	2	1	5	6	7	8	3	4
Maintenance - LTS pipelines	£ per KM of LTS pipeline	4	8	6	5	7	3	1	2
Maintenance - Governors	£ per No. of Governors	6	5	7	8	4	2	1	3
Maintenance	£ per MEAV (*1000)	1	4	5	7	6	8	3	2
Work Management	£ per WM/Ops	2	3	8	7	5	6	4	1
Back Office	£ per BO/Ops	6	3	8	5	7	4	2	1
Mandatory Tier 1 + <=2" steel	£ per Length Laid (Km)	1	2	7	4	3	8	6	5
Mandatory Tier 2	£ per Length Laid (Km)	4	1	3	5	2	7	6	8
Other: non-mandatory Mains	£ per Length Laid (Km)	5	1	3	4	2	6	8	7
Diversions	£ per Length Laid (Km)	5	1	4	6	7	8	2	3
Reinforcement	£ per Length Laid (Km)	5	2	7	3	4	8	6	1
Governors	£ per Governors Replaced	8	4	1	3	2	6	5	7
Connections	£ per No. of Services	4	3	6	7	5	8	2	1
Overall	Ranking	4	1	6	7	5	8	3	2

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COST ASSESSMENT

WALES&WEST UTILITIES

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Maintenance RRP definition

Routine maintenance

Include all maintenance costs, including site husbandry and other general site maintenance.

Non Routine maintenance

Non Routine Maintenance activities are those which are irregular in both timing and costs, and have a material effect on cost from year to year. Typically the requirement to carry out these activities should arise between 2 – 8 years, i.e. activities are known, but not likely to happen on an annual basis.

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Maintenance activities – examples

Annual or non 'Lumpy'	Lumpy or non frequent 2 years plus
Routine maintenance	**Non Routine maintenance**
HSE mandated maintenance i.e PSSR	Ad hoc condition surveys or non smoothed phased surveys
Company specific maintenance - annual maintenance plans	Remediation following routine maintenance - i.e land drainage, tree surgery, scrub clearance
Call out and faults inc alarms and repair	Refurbishment work i.e grit blasting, small part replacment, condition improving painting
Site husbandry	Special crossings and MOB refurbishment
Routine surveys or similar annual numbers i.e river, CIPS or Pearson surveys	CP and marker posts ad hoc replacement
CEME	
Alter services	

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Maintenance cost drivers

- Current cost driver for maintenance costs is maintenance MEAV
- MEAV needs to be updated to include all maintained assets
- MEAV covers scale but assumes all assets are in the same condition
- Cost drivers of maintenance are;
  - No of assets
  - Number of equipment attributes i.e. number of streams on an governor
  - Condition of asset – dictates frequency of non legislative maintenance and call out and faults
  - Company maintenance policies
  - Geographical spread of assets

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Maintenance cost drivers - continued

- Routine and non routine have different drivers
- Routine
  - Maintenance policy – HSE and company
  - No of assets and site equipment
  - Condition of assets
- Non routine
  - Driven by intervention decision and CBAs
  - Phasing of lumpy maintenance

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Regression assumptions

- Regressions run on all maintenance
- Included RIIO-GD1 only as RIIO changed the drivers in interventions, most networks have adopted more Opex solutions and less Capex (Opex/Capex trade-offs)

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Alternative drivers – Maintenance

- CSV 1
  - Maintenance MEAV for scale
  - Effort weighting for HSE driven maintenance (Policy driven maintenance X WWU target times)

- CSV 2
  - Maintenance MEAV for scale
  - Health indices

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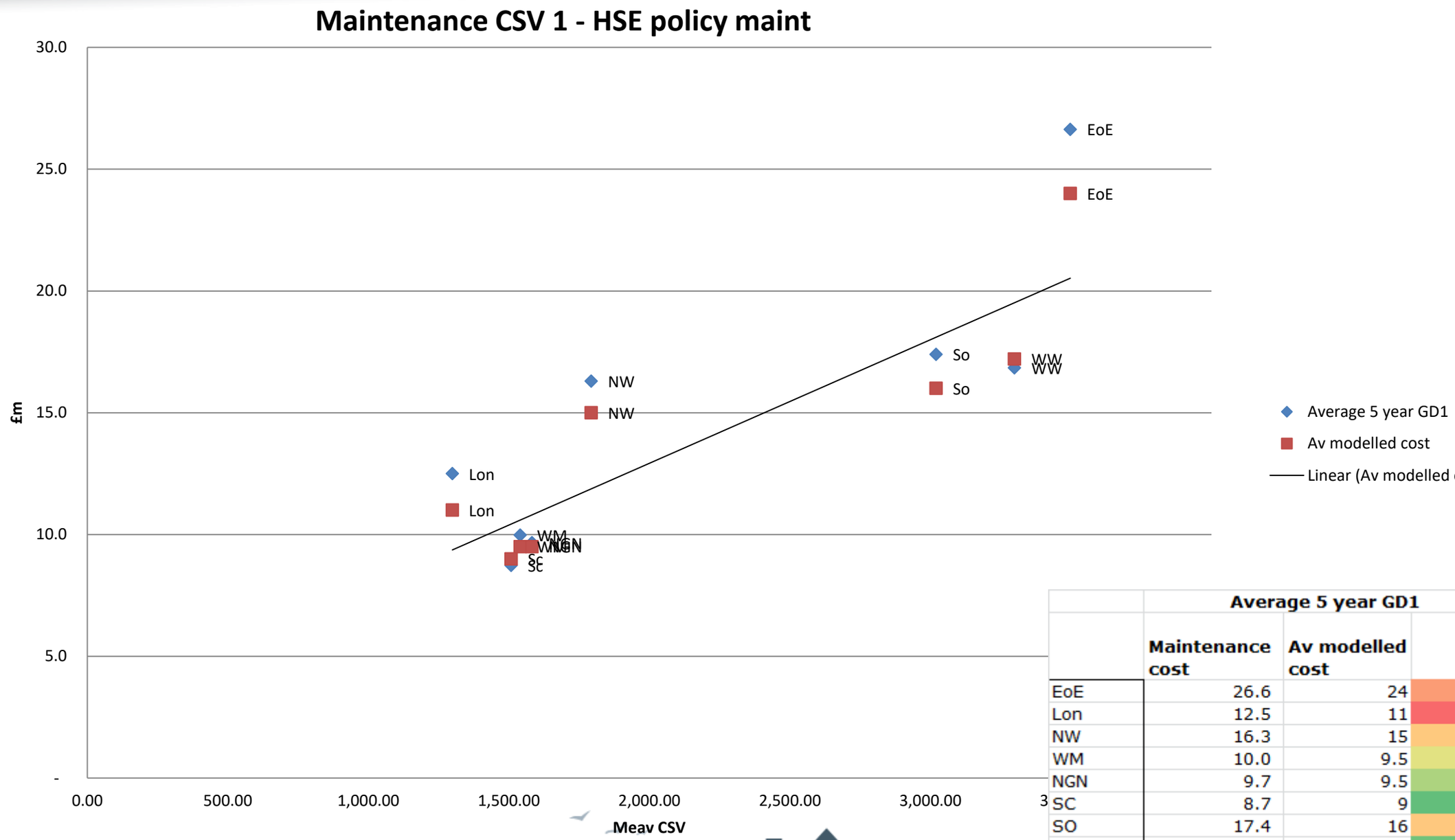
Results – CSV 1 – 5 year historical



	Average 5 year GD1		
	Maintenance cost	Av modelled cost	
EoE	26.6	24	1.11
Lon	12.5	11	1.14
NW	16.3	15	1.09
WM	10.0	9.5	1.05
NGN	9.7	9.5	1.02
SC	8.7	9	0.97
SO	17.4	16	1.09
WW	16.8	17.2	0.98

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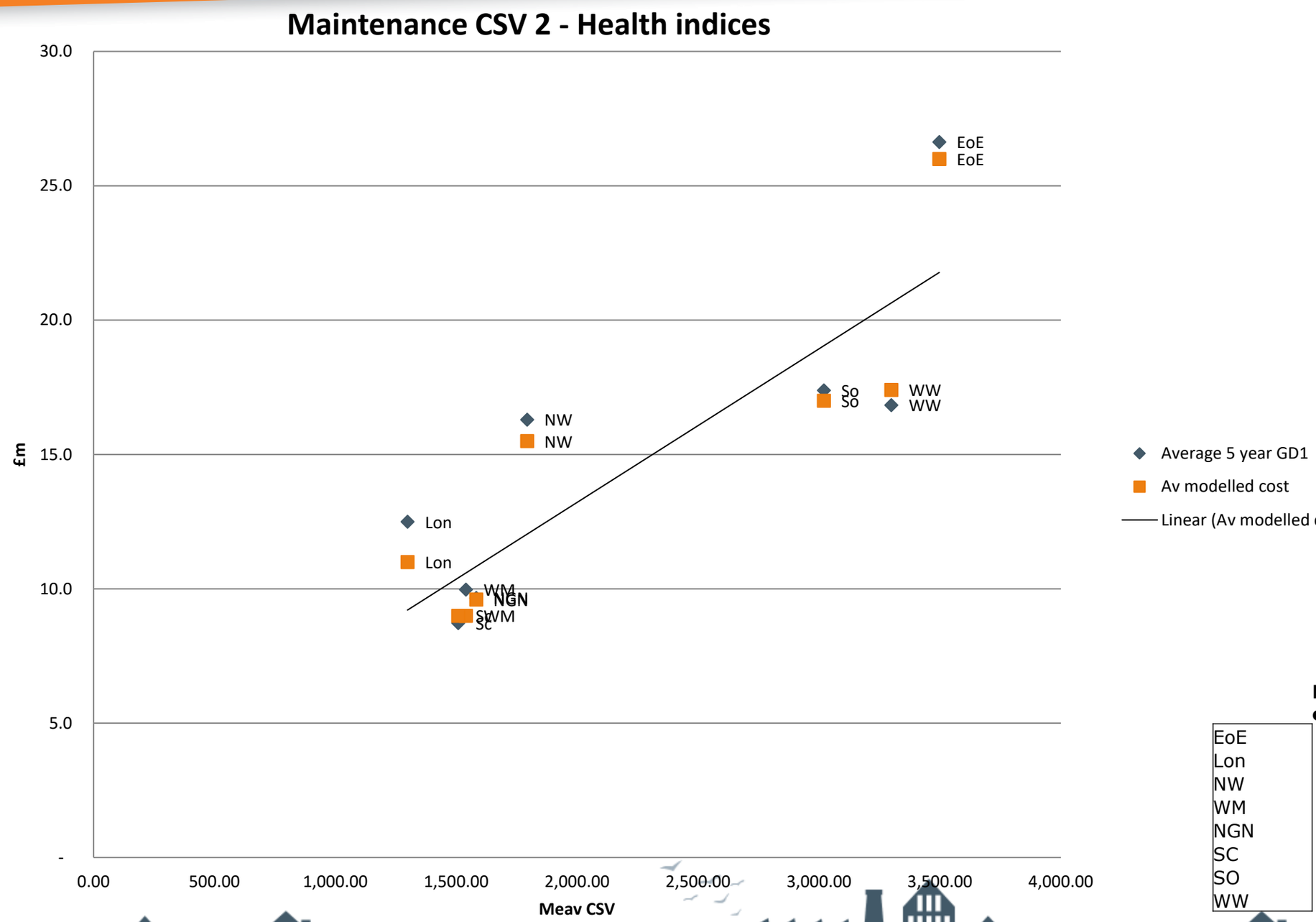
Results – CSV 2 – 5 year average



Average 5 year GD1

	Maintenance cost	Av modelled cost	
EoE	26.6	26	1.02
Lon	12.5	11	1.14
NW	16.3	15.5	1.05
WM	10.0	9	1.11
NGN	9.7	9.6	1.01
SC	8.7	9	0.97
SO	17.4	17	1.02
WW	16.8	17.4	0.97

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Follow up items

- Propose Non routine maintenance is grouped in with Capex/Repex solutions
- Review HSE policy maintenance and weightings – can other networks share policy maintenance schedules? Or do agree a standardised schedule per asset?
- Re-run regression on routine maintenance only