R-tools

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Ran at 2015-05-17 08:00:56
> wiki_username <- "Jouni"
> ### This code was run from page [[Energy balance in Kuopio#Answer]]
> library(OpasnetUtils)
> library(ggplot2)
> N <- 10
> objects.latest("Op_en5141", code_name = "initiate")
> balance <- Ovariable("balance", ddata = "Op_en5469.equations")
> balance@data$Policy[balance@data$Policy == ""] <- NA # Prepare indices for fillna. This should be part of fillna.
> balance@data$CHPcapacity[balance@data$CHPcapacity == ""] <- NA
> balance@data <- fillna(balance@data, marginals = 1:2) # Fill empty slots in indices.
> nonlinearity <- Ovariable("nonlinearity", ddata = "Op_en5469", subset = "Nonlinearity parameters")
> directinput <- Ovariable("directinput", ddata = "Op_en5141", subset = "No modelled upstream variables")
> energy.balance <- EvalOutput(energy.balance)
> oprint(summary(energy.balance))
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	Policy	energybalanceVars	mean	sd	min	Q0.025	median	Q0.975	max
1	BAU	Boughtelectricity	460.13	44.11	391.42	393.58	470.20	518.31	523.70
2	BAU	CHPelectricity	437.06	7.31	425.18	426.15	437.84	447.31	448.19
3	BAU	CHPheat	996.77	16.67	969.68	971.88	998.55	1020.16	1022.16
4	BAU	CHPloss	249.72	4.18	242.93	243.48	250.16	255.58	256.08
5	BAU	CHPoil	16.69	0.62	15.65	15.76	16.76	17.73	17.90
6	BAU	CHPpeat	1577.62	27.68	1532.89	1536.51	1580.63	1616.15	1619.29
7	BAU	CHPrenewable	89.24	0.00	89.24	89.24	89.24	89.24	89.24
8	BAU	ConsCommerceelectricity	341.87	3.83	334.26	335.28	342.17	347.51	348.00
9	BAU	ConsCommerceheat	224.00	0.00	224.00	224.00	224.00	224.00	224.00
10	BAU	ConsHomeelectricity	350.51	33.40	300.75	302.81	353.08	391.93	393.10
11	BAU	ConsHomeheat	279.14	14.41	251.00	254.03	278.35	298.53	300.11
12	BAU	ConsIndelectricity	204.00	0.00	204.00	204.00	204.00	204.00	204.00
13	BAU	ConsIndheat	57.10	0.00	57.10	57.10	57.10	57.10	57.10
14	BAU	ConsMunicipelectricity	50.30	0.00	50.30	50.30	50.30	50.30	50.30
15	BAU	ConsMunicipheat	386.00	0.00	386.00	386.00	386.00	386.00	386.00
16	BAU	Hbiogas	4.28	0.07	4.16	4.17	4.28	4.38	4.38
17	BAU	Heatneed	1076.52	18.01	1047.25	1049.63	1078.43	1101.78	1103.94
18	BAU	Hheat	79.74	1.33	77.57	77.75	79.88	81.61	81.77
19	BAU	Hloss	5.66	0.09	5.51	5.52	5.67	5.80	5.81
20	BAU	Hoil	81.13	1.36	78.92	79.10	81.27	83.03	83.19
21	BAU	Indelectricity	95.15	14.80	76.76	77.79	89.16	118.89	119.08
22	BAU	Indloss	79.78	12.41	64.36	65.23	74.75	99.69	99.84
23	BAU	Indoil	63.32	9.85	51.09	51.77	59.34	79.13	79.25
24	BAU	Indpeat	232.85	36.22	187.85	190.38	218.19	290.96	291.41
25	BAU	Indprocessheat	526.89	81.95	425.07	430.79	493.70	658.37	659.39
26	BAU	Indrenewable	405.64	63.09	327.25	331.66	380.09	506.87	507.65
27	BAU	Losselectricity	45.66	1.67	43.74	43.81	45.16	48.52	48.67
28	BAU	Lossheat	130.27	7.82	120.79	121.23	127.54	143.38	143.77
29	Biofuel	Boughtelectricity	455.98	41.30	395.28	396.42	469.63	508.46	513.35
30	Biofuel	CHPelectricity	434.92	4.54	429.07	429.16	436.75	441.99	443.26
31	Biofuel	CHPheat	991.90	10.35	978.54	978.76	996.08	1008.01	1010.93
32	Biofuel	CHPloss	248.50	2.59	245.15	245.21	249.54	252.53	253.26
33	Biofuel	CHPoil	8.91	0.22	8.53	8.58	8.86	9.25	9.28
34	Biofuel	CHPpeat	833.20	8.70	821.86	822.10	836.68	846.73	849.15
35	Biofuel	CHPrenewable	833.20	8.70	821.86	822.10	836.68	846.73	849.15
36	Biofuel	ConsCommerceelectricity	342.79	5.51	334.10	334.25	344.39	349.06	349.15
37	Biofuel	ConsCommerceheat	224.00	0.00	224.00	224.00	224.00	224.00	224.00
38	Biofuel	ConsHomeelectricity	348.38	27.80	305.73	306.84	358.37	387.99	395.77
39	Biofuel	ConsHomeheat	271.76	14.36	256.12	256.27	272.36	290.02	290.36
40	Biofuel	ConsIndelectricity	204.00	0.00	204.00	204.00	204.00	204.00	204.00
41	Biofuel	ConsIndheat	57.10	0.00	57.10	57.10	57.10	57.10	57.10
42	Biofuel	ConsMunicipelectricity	50.30	0.00	50.30	50.30	50.30	50.30	50.30
43	Biofuel	ConsMunicipheat	386.00	0.00	386.00	386.00	386.00	386.00	386.00
44	Biofuel	Hbiogas	4.26	0.04	4.20	4.20	4.27	4.32	4.34
45	Biofuel	Heatneed	1071.25	11.17	1056.83	1057.06	1075.76	1088.66	1091.80
46	Biofuel	Hheat	79.35	0.83	78.28	78.30	79.69	80.64	80.87
47	Biofuel	Hloss	5.63	0.06	5.56	5.56	5.66	5.73	5.74
48	Biofuel	Hoil	80.73	0.84	79.64	79.66	81.07	82.04	82.28
49	Biofuel	Indelectricity	100.50	15.08	72.97	76.24	101.82	121.70	122.56
50	Biofuel	Indloss	84.27	12.64	61.18	63.92	85.37	102.04	102.76
51	Biofuel	Indoil	66.89	10.03	48.56	50.74	67.76	80.99	81.57
52	Biofuel	Indpeat	245.95	36.89	178.58	186.58	249.17	297.82	299.93
53	Biofuel	Indprocessheat	556.53	83.48	404.08	422.18	563.81	673.89	678.68
54	Biofuel	Indrenewable	428.46	64.27	311.09	325.03	434.06	518.82	522.50
55	Biofuel	Losselectricity	45.94	1.22	43.73	44.02	45.84	47.84	48.00
56	Biofuel	Lossheat	132.39	6.89	119.70	121.26	133.26	142.61	143.22

> ggplot(energy.balance@output, aes_string(x = "energybalanceVars", y = "energy.balanceResult", fill = "Policy")) +

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 + geom_boxplot() +
 + theme_grey(base_size = 24) +
 + theme(axis.text.x = element_text(angle = 90, hjust = 1))
```