

NTS Exit Flexibility Capability Product definition

- NTS Enduring Regime Proposals

EOWG

12th July 2006

... this presentation focuses on some of the aspects of the two papers that were circulated to the EOWG circulation list prior to the 12th July 2006 EOWG

... the two papers are:

Flow Flexibility Zonal Capacity Attribution

(file: 060710_Flow_Flex_Zonal_Attribution)

NTS' development of the “AEP workgroup” alternative proposition

(file: 060711_EOWG_AEP_Alternative_Enduring_Proposal)

... since the EOWG 11 28th June National Grid have sought to develop an approach to permit, subject to physical system limitations, “migration” of the 2010/11 22 mcm of physically firm flexibility capacity

... the proposed approach involves

seeking to define zonal maximum for each of the 17 zones

taking account of potential maximum area utilisation

taking account of potential maximum national availability

Theoretical approach to develop zonal maxima

Zone	Option 1	Option 2	Option 3a	Option 3b	Option 3c	Option 4	Option 5	Option 6	Max value for each Zone
0	2.18	1.44	3.30	3.16	3.58	1.37	2.70	2.11	3.58
1	0.64	1.32	2.51	2.40	1.84	1.37	3.57	4.60	4.60
2	0.17	0.40	0.37	0.36	0.27	0.26	0.21	0.06	0.40
3	0.09	2.11	2.45	2.35	3.19	1.90	2.44	2.43	3.19
4	5.47	2.41	5.95	5.71	4.37	2.57	4.26	2.61	5.95
5	1.54	0.85	1.20	1.15	0.88	0.60	0.79	0.39	1.54
6	0.56	0.64	-0.46	0.00	0.24	0.44	-0.26	-0.07	0.64
7	1.58	0.87	2.02	1.94	1.82	1.49	1.56	1.12	2.02
8	1.59	0.82	-0.47	0.00	0.78	2.03	-0.27	-0.07	2.03
9	1.77	1.25	0.13	0.12	0.67	3.01	0.83	1.51	3.01
10	1.20	0.78	0.00	0.00	0.00	0.46	0.65	1.29	1.29
11	1.75	1.32	1.75	1.68	1.28	1.08	2.22	2.67	2.67
12	0.80	1.59	0.87	0.84	1.21	2.21	0.50	0.13	2.21
13	0.34	3.26	0.33	0.32	0.24	0.10	0.34	0.34	3.26
14	0.25	1.29	0.92	0.89	0.80	1.62	1.09	1.25	1.62
15	1.40	0.72	0.05	0.05	0.04	0.29	0.77	1.46	1.46
16	0.69	0.92	1.07	1.03	0.78	1.21	0.61	0.16	1.21
	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	40.71

Option 1 Highest Flex utilisation day (1 day) (Deepak Mistry analysis 22/06)

Option 2 Highest Zonal Flex utilisation (different days for different Zones) (Deepak Mistry Analysis 22/06)

Option 3 All attributions derived from DN's OCS statement Flex booking for 09/10

Option 3a Based on nodal holdings aggregated to zonal level

Option 3b Aggregate zonal bookings set to zero where negative

Option 3c Nodal negatives set to zero before aggregation

Option 4 Based on DN's OCS Flat booking plus DC's 10/11 predicted demand from Transit UK day 1

Option 5 DN's Flex holding from OCS Flex plus DC 10/11 predicted demand pro-rated to 10mcm (22-12DN Flex hldng)

Option 6 DN's Flex holding from OCS Flex plus DC 10/11 predicted demand, then pro-rate the 22 based on this sum

... the system could not accommodate simultaneous utilisation of these levels of flexibility capacity holdings

... neither is it practical, given the interactions and complexity of the necessary modelling, to define independent zonal maxima that are based on physical capability

... recent network analysis has indicated, under certain assumptions, the ability of the system to accommodate “area” maximum

“Physical” flexibility utilisation limits by area

Area	Zone	Max value for each Zone ZM_i	Max Area Value (from Network Analysis) AM_{Area}
North	0	3.58	9.00
	1	4.60	
	2	0.40	
	3	3.19	
	4	5.95	
Central	5	1.54	8.00
	6	0.64	
	11	2.67	
	12	2.21	
	15	1.46	
West	7	2.02	5.00
	14	1.62	
East	8	2.03	8.00
	9	3.01	
	10	1.29	
	13	3.26	
	16	1.21	

.... the area maximum are not capable of being utilised simultaneously

.... however subject to caveats in the paper:

DNs secure sufficient flex capacity to cover NTS diurnal support requirement based upon current planning processes

context of Standard Special Condition A17

... then NTS supports the release of flexibility

in each zone up to the zonal maxima, and

in each area up to the area maxima

provided that the national aggregate “physically firm flexibility is limited to 22 mcm

Proposed “physical firm” flexibility capacity release quantities

Area	Zone	Max value for each Zone ZM_i	Max Area Value (from Network Analysis) AM_{Area}	National Max
North	0	3.58	9.00	22
	1	4.60		
	2	0.40		
	3	3.19		
	4	5.95		
Central	5	1.54	8.00	
	6	0.64		
	11	2.67		
	12	2.21		
	15	1.46		
West	7	2.02	5.00	
	14	1.62		
East	8	2.03	8.00	
	9	3.01		
	10	1.29		
	13	3.26		
	16	1.21		

Above quantities for 2010/11

Understanding implications

- ◆ Long term “physically firm” flexibility release
 - ◆ some migration to where/who values it most
 - ◆ not clear whether all “demands” will be satisfied



Some users may require additional access/capacity

Releasing further capacity

- ◆ “Longer term release”
 - ◆ NTS will not oversell without system management assurances



Financially Firm Concept

.... would require a mandatory requirement to offer back flexibility

... EOWG initial indications that it did not support the concept

Releasing further capacity

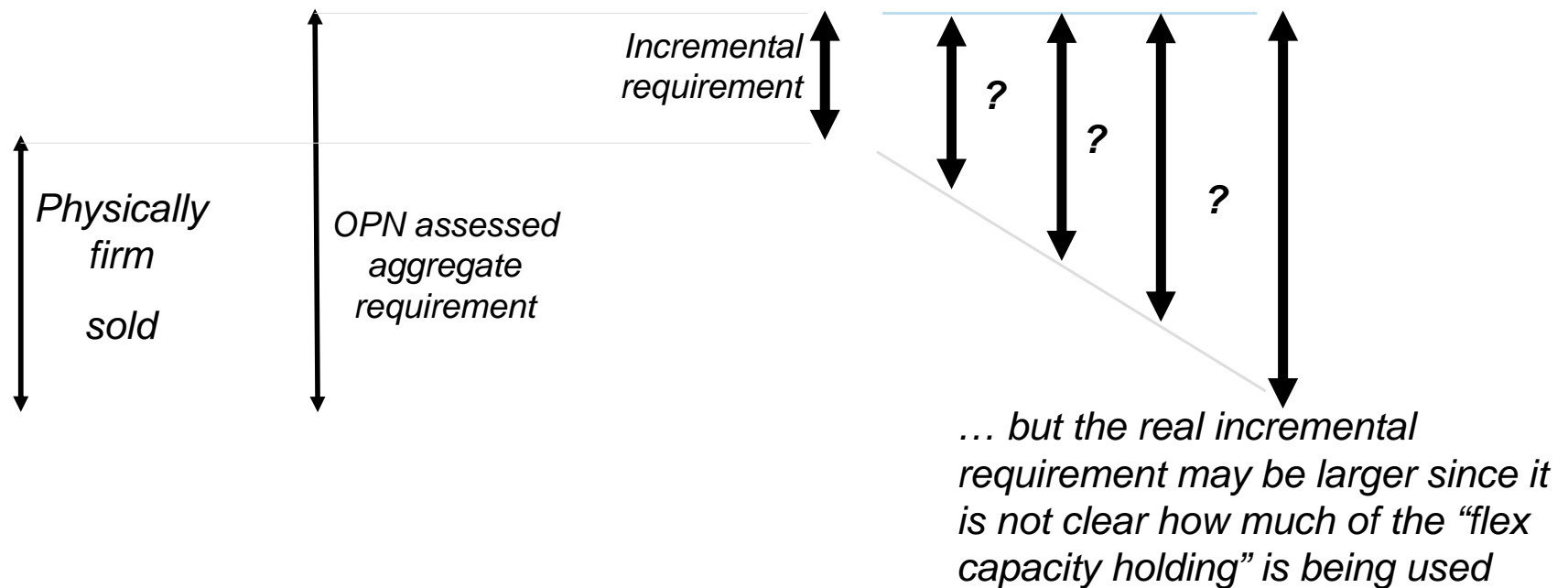
- ◆ “Shorter term release”
 - ◆ Greater opportunity for releases closer to gas flows
 - ◆ Less uncertainty about supply patterns?
 - ◆ Still uncertainty about “flexibility utilisation”

Approach	Comment	EOWG view?
Release of “fully firm” capacity holding	Likely to involve new daily processes	Unwarranted complexity
OPN based release processes	Extension of current DN processes – avoids new processes unless within day constraints envisaged	Support the approach – avoids effort/IT investment

... with either approach in the absence of confidence in system management tools not credible to contemplate overselling

Understanding the issues about short-term firm flex release

... in the context of the OPN based approach



NTS' development of the "AEP workgroup" alternative proposition paper

Issue 1: Assessment of capability against OPN submission

Short term release questions – holding utilisation

What principles should underpin the calculation of short term flex capacity release to promote maximum access to system capability?

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Issue 1: Assessment of capability against OPN submission

Short term release questions - rationing

OPN based applications may imply incremental flex applications beyond system capability

OPNs, by virtue of aggregation at multi-user sites, do not reveal individual user flex requirement

What principles should underpin the rationing process?

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Issue 2: Process for rationing

Short term release questions

- within day constraint identification

Constraints may only become apparent within day

OPN based applications would not imply confirmed user flex holdings

How would capacity allocation process operate in the context of within day constraints?

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Issue 3: Within day constraint identification