DEVELOPING CAPEX INCENTIVES FOR DAA: TRIGGERS

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CONTENTS

Important Notice

1. INTRODUCTION

This paper considers an option based around "triggers" to strengthen the incentives for Dublin Airport Authority (DAA) to deliver capital expenditure (capex) projects efficiently (at least cost) and effectively (in a timely manner and to the appropriate quality standard). By triggers we mean adjustments, either positive or negative, to DAA's revenue, which are linked to the achievement of specific inputs or outputs. For example, an amount of revenue for DAA could be linked to the successful and timely completion of a second terminal at Dublin Airport.

This option broadly assumes that there are a set of capex projects or requirements that have been reviewed and accepted by CAR as being required and for which an efficient cost has been assessed and accepted by CAR. Therefore, the option is about providing incentives for efficient and timely delivery of projects that have been determined as being required, so is principally focused on the decisions about which projects should be allowed in the Regulated Asset Base (RAB) and at what cost, and the level of DAA's overall revenue allowance.

Under this option a project would be subject to triggers to determine when they would be included in the RAB and at what cost and to determine DAA's overall revenue allowance. Projects can have input or output triggers. An *input trigger* is an event in the planning or construction of a project whose completion can be verified; whilst an *output trigger* is a definition of some requirements that the project is expected to deliver, which can be verified or measured.

Input and output triggers can be either positive or negative. A positive trigger is a gain in revenue for DAA on completion of an event or delivery of a requirement by a certain date, while a negative trigger is the loss of revenue for failure to complete a stage of a project or deliver a requirement as planned or by the date previously agreed.

An input-positive trigger is one that would lead to an increase in revenue once a pre-specified input event had occurred – implying that some, or all, the capex associated with the input is included in the RAB once the input has been verified. With a negative trigger the assumption is that the capex has already been included in the RAB and only if the event does not take place does anything happen, which in this case would be removal (or suspension) of some, or all, the associated capex from the RAB, until such time as the event is verified as having occurred.

In general we would only expect that triggers of these types would be appropriate for relatively large capex projects that DAA was proposing, where construction will take place over a relatively long period of time, and perhaps straddle two determination periods. Such projects carry a relatively large financial risk for DAA if their inclusion in the RAB is based only on an ex post assessment by CAR, and it is difficult for DAA to plan effectively for such projects if they do not know how they will be treated across two determination periods. Conversely, without ex ante incentives for DAA there would be a risk that customers would

be exposed to any major cost overruns or the costs of delays to major projects. It should also reduce significantly the issues that CAR has to review for each determination when deciding the level of actual capex to include in the RAB.

Project characteristics determine whether they should have input or output triggers and whether the triggers should be positive or negative. We discuss in more detail below the types of projects that might be most suitable for input and output triggers, and positive and negative triggers, with reference to specific projects included in DAA's May 2005 Capital Investment Programme (CIP) and the CIP it has recently submitted to CAR.

We also discuss the amount of money that should be subject to this type of incentive in relation to specific projects. It is important that the incentive is sufficiently large to act as a genuine incentive for DAA to meet and potentially beat the triggers, while not being so large that DAA is excessively penalised if there are cost overruns or delays due to factors that are to some degree beyond DAA's control.

2. IMPLEMENTING THE TRIGGERS APPROACH

In this section we discuss in more detail how this approach could be implemented by CAR.

Input triggers provide an ongoing monitoring framework that reduces the risk for DAA of capex not being included in the RAB, and identifies at an early stage to CAR any major problems, such as project delays or cost overruns. They also provide an objective basis for other stakeholders to understand how CAR will decide whether and when these expenditures will be included in the RAB. The triggers can also provide a positive incentive for DAA to complete projects ahead of schedule if expenditure goes into the RAB from the date that completion of a trigger is verified. Revenue advancement linked to input and/or negative triggers can thereby reduce financing costs and financeability risks for DAA when it is undertaking a major new investment.

Input triggers are most likely to be suitable for large projects, such as new terminals or piers that have a relatively lengthy development and construction timetable, which sometimes straddles two determination periods. It is also easier to define the inputs to such projects rather than the outputs, as outputs are, inevitably, multi-faceted. For example, a terminal would have outputs based on passenger throughput, retail and commercial space, administrative facilities for airlines, quality of service levels, etc. It would be difficult to develop relatively simple output measures that balanced these different outputs and avoided the risk of creating significant perverse incentives for DAA's behaviour.

If we use a new terminal as an example for input triggers, some of the following stages of the project might be appropriate for acting as input triggers:

- Planning permission secured;
- Construction contracts signed;
- Preparatory work completed which could include relocation of existing services, levelling land, etc;
- Various specific aspects of the terminal completed;
- The whole terminal completed; and
- First day of operation of the terminal.

All these events could be directly verified by CAR or independent engineers/ auditors. DAA could appoint and pay for the independent verifiers, perhaps with CAR having a right to reject an appointment if it had a concern about their independence. In advance of the project a sum of money would be identified for each stage of the project. However, it is important to note that this approach requires CAR to get involved in advance in understanding the detailed costing and planning of a project.

Smaller projects and projects for which outputs can be more simply defined could have output triggers. Once the outputs have been delivered, even if the precise nature of the project is different than envisaged in DAA's original plan, the expenditure approved by CAR (or the actual amount spent if lower than planned), would be included in the RAB.

Examples of output triggers might be for new car parking spaces and passenger processing areas. For car parking the output triggers could be X number of car parking spaces of at least dimensions Y, within Z distance of the airport terminals. For passenger processing areas the output triggers could be to deliver a sufficiently well organised processing area so passengers had a maximum waiting time (perhaps 95% of passengers waiting no longer than 10 minutes).

Again the triggers would be directly verifiable by CAR or auditors it appointed. An advantage of this approach is that CAR would not need to consider the detailed design of projects, but just the outputs to be delivered and a reasonable cost. However, careful definition of the outputs is essential to avoid potentially perverse combinations. Hence, there is an important trade-off between the degree of completeness of the specification (which would give weak efficiency incentives on DAA) and looser specifications which risk providing lower quality facilities than intended.

We discuss below, with specific reference to DAA's most recent CIPs, how much revenue should be at risk under these types of incentives. Due to the nature of the projects included in the CIPs we focus primarily on input rather than output triggers.

3. SIMILAR APPROACHES BY OTHER REGULATORS

There are many examples of regulators linking a proportion of company's revenue to the achievement of certain outputs or quality of service standards. For example, the electricity distribution companies in Great Britain are subject to absolute and relative incentives for the achievement of certain quality of service outputs. Gas distribution companies in Great Britain have been subject to unit cost incentives for their programme of replacing cast iron mains.

There are, however, fewer examples of regulators linking the inclusion of stages or parts of projects in the RAB (and therefore providing revenue advancement) to the direct delivery of certain inputs or outputs. The examples we have found are predominantly input triggers. CAA has adopted this approach for BAA's Terminal 5 investment at Heathrow airport and some aspects of Gatwick's investment programme. CAA receives verification that certain stages of the projects have been completed and this triggers the inclusion of revenue within BAA's RAB. The initial view seems to indicate that this approach has worked relatively well in this case.[1]

Ofgem has adopted a variation on this approach for investments in additional entry and exit capacity by National Grid Gas (NGG) to its national transmission system. Ofgem specifies at the start of the price control unit revenue drivers for additional investment, and if during the price control Ofgem approves investment in additional capacity, NGG are rewarded with the ex ante unit revenue driver irrespective of the actual cost of the project. The project is then subsequently added to the RAB and remunerated in accordance with existing capacity. We are also aware that triggers have been used in the gas sector in Argentina.

Perhaps the closest example to output triggers that we are aware of, are the agreements between London Underground and the private companies that are responsible for the development and maintenance of the underground network. These agreements include a substantial programme of investment and their revenues are dependent on a detailed range of output measures, although many of these output measures are not directly linked to particular investments. The complexity of the agreements meant that large costs were incurred to negotiate the agreements and significant ongoing costs are being incurred to monitor the agreements.

[1] "Economic Regulation of BAA London Airports (Heathrow, Gatwick and Stansted) 2003-2008, CAA Decision", CAA, February 2003.

4. ADVANTAGES AND DISADVANTAGES OF USING TRIGGERS

Table 1 below provides an overview of the potential advantages and disadvantages of using input and output triggers.

Table 1 – Advantages and Disadvantages of using Triggers to provide stronger incentives for DAA's capex

Advantages	Disadvantages
Ex ante framework for CAR's determination of which projects will be included in DAA's RAB reduces regulatory risk and therefore DAA's cost of capital. The use of output triggers reduces the involvement CAR has to have in the design of projects and allows DAA to decide the most efficient way to deliver outputs. The automatic nature of the triggers reduces the work and decisions for CAR at each review when deciding the RAB. If expenditure is included in the RAB from the time at which triggers are met there is a strong incentive for DAA to complete projects ahead of schedule. DAA's financing costs and financeability risks for large projects can be reduced through revenue advancement linked to input triggers.	The development of input triggers requires CAR to get involved in detailed design issues for capex. CAR's discretion to decide which projects are included in the RAB at later reviews is significantly reduced. DAA might seek to undertake projects that should otherwise have been deferred or dropped to earn the revenue available under the triggers. If output cannot be easily defined or include a number of dimensions, DAA could complete projects that failed to deliver the full range of required outputs. Effective output triggers might require the specification of very detailed outputs.

5. APPLYING TRIGGERS TO DAA'S CIP'S

DAA has recently provided CAR with a new CIP, incorporating an updated and re-costed plan for a new terminal at Dublin Airport. Table 2 below summarises the main elements of the CIP, DAA's projection for the cost of each element and what percentage of the total proposed CIP the project comprises.

Table 2 – Summary of DAA's new CIP

Projects	**Proposed cost (€m)**	**% of total CIP projected cost**
Terminal 2	606	55.6
Stands and airfield	120	11
Pier D	113	10.4
Terminal 1 extension	54	5
Car parking	43	3.9
Commercial property	12	1.1
Key infrastructure	16	1.5
Utilities	53	4.9
Plant and equipment	6	0.6
Retail	15	1.4
Other terminal and pier complexes	51	4.7
Total	1,089	100

The three largest projects in the CIP (Terminal 2, Stands and airfield and Pier D) account for 77% of the projected cost for the CIP. Although there are inter-linkages between the Terminal 2, and Stands and airfield projects, for the purposes of considering triggers we have treated them as separate projects. The most value for DAA, customers and CAR is likely to come from using triggers (specifically, input triggers) for these projects. Given their size and construction timetable, particularly for Terminal 2, they are also the projects that will have the greatest financial risk for DAA and conversely the greatest potential positive benefit for customers through strong incentives on DAA to deliver on time and at an efficient cost.

CEPA consider that these projects are best suited to input triggers given their size and the difficultly of specifying relatively simple output triggers. While it would, at least in theory, be possible to specify output triggers for at least some of the projects, these are likely to be high level deliverables and this could create perverse incentives for DAA. This is because output

measures for projects such as terminals comprise a number of different factors that could be neglected by DAA if it was focused on specific output triggers.

These three projects are also projects for which there is general agreement about their need, but less agreement about the optimal scope and scale. Therefore, there is less risk that using input triggers will lead to DAA undertaking projects which are not required simply to receive money for meeting a trigger.

The precise structure of the input triggers could only be developed following discussions between CAR and DAA to gain a full understanding of the constituent parts of each project and the broad spread of revenue across the different stages of the projects. However, CAR can have in mind a broad set of principles and approach for the triggers.

We suggest that CAR seek to identify a number of distinct phases in the project with identifiable inputs to demonstrate their completion. So far as possible, CAR would seek to ensure that the phases and inputs identified where evenly spread across the projects in terms of the timescale for the project and its cost. The inputs should be events that an independent auditor can easily and clearly verify.

There are broadly two approaches to setting the financial parameters for the triggers – making direct adjustments to DAA's RAB or adjusting the allowed revenue of DAA, but not adjusting the RAB. We discuss each approach in turn below, and while there are advantages and disadvantages to each option, we would suggest that for the initial introduction of triggers the second of these approaches is adopted. This is essentially the approach adopted by CAA for BAA in Great Britain.

Under either approach the financial risk that DAA should be exposed to will need to be considered on a project by project and overall basis. If a number of input triggers are used for each stage of the project, DAA's risk at each stage of the project would also need to be considered when deciding the amount of revenue that would be at stake. The revenue at stake would need to be sufficient to provide a meaningful incentive for DAA to meet the triggers, while in most circumstances, probably not adversely affecting its financeability if triggers are not met. However, CAR would have to verify this based on an overall financeability assessment for DAA.

Under the first approach, CAR would decide how much of the value of the project should be at stake. A range of 5 to 10% might be a reasonable initial starting point. If DAA took 7.5% (the mid-point of 5 to 10%) as the revenue to be exposed for meeting each trigger then DAA would be ensured that if it met the trigger on time and below forecast costs, the ex ante assessment of the efficient costs of that part of the project would be included in the RAB permanently from the time of the next review. If it met the trigger late or exceeded the forecast costs, the ex ante assessment of the efficient costs less 7.5% would be included in the RAB permanently from the time of the next review. If a trigger is never met then DAA does not receive any of the money in the RAB permanently for this or any subsequent triggers. Therefore, the trigger is used to provide an incentive to provide the investment on

time and below forecast cost, and results in a permanent impact on the RAB if the trigger is not met.

CAR would need to separately consider how to treat large overspends compared to forecast costs by DAA. DAA should still permanently lose the incentive payment, but there may be overspends that are partly or largely outside of DAA's control for which it should not be significantly further penalised. For example, if DAA competitively tenders for the work and bids are above forecast costs then the loss of the 7.5% incentive and financing costs up to the next review might be sufficient, with the overspend included in the RAB permanently from the next review.

Under the second approach, CAR would calculate the impact on DAA's revenue of each investment, i.e. the depreciation and return, in the price control period or a specified period across two price controls, e.g. 5 years. The triggers would then be a percentage of this revenue. Given that this revenue will only represent a small part of DAA's remuneration for assets with long economic lives, such as terminals, piers and airfields and stands, the trigger would need to be quite a high percentage of this revenue, perhaps up to 50%. The revenue adjustment would only apply for a specified period and would not directly affect the RAB, so would need to be a significantly higher percentage than under the first option to have a similar incentive effect. CAR would have to take separate decisions about the level of capex to permanently include in the RAB in the future, perhaps based on the ex ante guidance discussed in a separate CEPA paper. DAA's failure to achieve the triggers due to higher costs than forecast would act as an initial signal that further consideration of the amount to include in the RAB was required.

In principle triggers could be structured such that a proportion of overspend or the degree or lateness in delivery are taken into account when deciding whether DAA foregoes all of the revenue at stake for a trigger if there is only a small cost or time overrun. This would increase the complexity of the mechanism, although it might better reflect the possibility that some cost overruns or delays could be for factors largely outside DAA's control.

Although the first approach might be considered to be more formal, it risks being somewhat arbitrary as regards the adjustments, and has potentially a very significant long term impact on the financial position of DAA because it is a permanent adjustment to the RAB. The second approach can still provide a powerful financial incentive for DAA to meet the triggers, while not involving a permanent RAB adjustment. Therefore, we suggest that the second option is the best approach.

In addition to the projects in the new DAA CIP which can be covered by input triggers in the form explained above, the CIP also identifies a potential need to build a parallel runway at some point in the future depending on demand levels. The timing of the requirement for this runway is sensitive to demand levels and forecasts. Given the uncertainty of the timing of the project this appears to be particularly suited to the use of a positive trigger to reward DAA when the investment actually takes place.

The outputs provided by a runway are relatively easy to measure in terms of aircraft movements and take-offs and landings, with limited opportunities for DAA to make economies in construction by focusing on a narrow set of outputs to the exclusion of other important outputs. CAR would need to work with DAA to develop an agreed set of outputs and an assessment of the efficient costs of delivering the outputs. Therefore, this project could be suited to an output trigger.

Therefore, for the parallel runway we recommend CAR developing a positive *output* trigger such that the costs of developing the runway would be included in the RAB from the point at which DAA completed the project. The date at which the project was commenced would be subject to certain agreed criteria between CAR and DAA related to actual and forecast demand levels. Similar financial parameters to those discussed above would again be appropriate. Given that the timing of the project is uncertain, CAR might wish to have slightly weaker incentives to avoid giving DAA too strong an incentive to build rather than to defer. Similar issues to those discussed above would apply for the treatment of overspends compared to forecast costs.

6. CONCLUSIONS

We believe there is scope to use input and, to a lesser extent, output triggers for a number of large projects within the new CIP proposed by DAA. Triggers of this type are generally best suited to large projects and the majority of value in DAA's CIP relates to three projects. CAR would need to work with DAA to develop the detailed inputs and outputs for the triggers we have recommended and to assess the efficient costs of the project. We are recommending that up to 50% of the revenue associated with the project in the first five years would be exposed to DAA's completion of the projects on time and below forecast costs.

Strengthened capex incentives through triggers are only one aspect of strengthening the capex incentives for DAA. Any triggers that CAR used would need to be aligned with additional ex ante guidance and any other incentives introduced to strengthen capex incentives. To ensure that the triggers had the maximum impact it would also be important for them to be aligned with the commercial incentives faced by DAA's management in their Management Incentive Plans (MIPs).