

Post Brexit Strategy: Transforming the UK

A Win for Housing, Jobs, the Environment, Competitiveness and the Taxpayer

This paper seeks to outline a major infrastructure project proposal that can uniquely help to improve some of the UK's greatest challenges: namely London's housing shortage; regional disparities; logistics competitiveness, and environmental inefficiencies. Most importantly this can be done in a way that speaks both to the economic conservatives' desire for private sector stimulus and UK export competitiveness, and the political left's desire for increased state ownership of crucial infrastructure assets and large-scale job creation. However, it will require a Government willing to alter the laissez-faire air transport status quo in favor of bold, visionary - but entirely feasible and fundable transformation. The prize for the PM willing to do this goes well beyond the social, economic and environmental gains...they are also likely to get their name on one of the world's most heavily used airports well into the 22nd century.

Repurpose Heathrow and build a new airport for the 22nd Century

The proposal is to use the UK Government's legal capacity to restrict flights for environmental reasons to motivate the private sector owners of Heathrow to accept the closure of the airport, and to redevelop it as a best practice mass urban residential center. The government would correspondingly use the power of eminent domain to consolidate land (or reclaim land) and to then hold a tender concession to build a new state of the art airport that resolves the London-centric distortions, inefficiencies and environmental impact of pre-war Heathrow airport. Beyond being bold and transformational, the economics of both the development value of Heathrow's high value well connected urban location to existing Heathrow owners, and the ability get the private sector to fund the construction of the new airport, mean that funding will not be the biggest constraint to this project. Rather the biggest constraint will be political will and vision to disrupt the status quo.

This proposal will leverage Heathrow's location inside the M25 and transport links post cross-rail as a core strategy to help solve London's housing and congestion problems with world class urban development. The new state-of-the-art environmentally efficient airport, if properly linked to the broader UK transport network, can serve as a passenger transit and export logistics hub for a catchment area well beyond the London centric Heathrow airport.

A new airport will be privately funded & run...but owned by the state

The new airport will be constructed and funded under a build under a build operate transfer concession model. Unlike many other infrastructure projects reliant on heavy state funding, this project will have the near guarantee of large scale passenger volumes as Heathrow flights are transferred to the larger more efficient airport. This will mean the project has highly monetizeable revenue flow for the private sector operators (similar to the economics for a company closing an old factory and moving it to a new facility). This will allow bidders to propose full funding, construction and operation of the new airport. The winning bidder will be the consortium that returns the asset to the state in the least amount of time (which will be measured in decades). The private "owner" will be incentivized to build as efficiently

and quickly as possible to maximize the returns from the operational period before the rights are again transferred to the state. Should major problems occur construction, the ability to retender what has been privately funded to that point, should also substantially de-risk the potential liability of the taxpayer that plagues many major infrastructure projects.

- **Housing – Heathrow is part of the solution:** This proposal will significantly increase the housing supply with a concentration that will allow for cutting edge living and environmental standards. This project alone has the potential to easily add 500,000 (and as many as 1 million) habitable rooms without including the impact on neighboring areas. It should add from 20% to 40% of all the new homes that were built in London in the 20 years to 2016. Heathrow is one-fifth the size of Manhattan – the opportunity is enormous.
- **Environmental Win:** Moving the airport from within the M25 will substantially reduce both air and noise pollution impacting millions of urban residents. From a carbon and particle pollution perspective, it can significantly reduce auto emissions dependent on the new airports' transport links and scope for emission restrictions on bespoke roads serving the new airport. The new developed urban area should be a template for future environmental efficiency, and carbon minimisation. While non-growth environmentalist will not like the capacity growth in air traffic, but on a per passenger (and per resident basis), this combined project should be substantially more efficient than existing housing and air transport capacity. Crucially domestic projects of this scale will motivate improved competitiveness in environmental technologies and skill sets within the service and construction industries of Britain.
- **Employment Win:** This proposal will generate a large number of jobs both directly and indirectly. Planning, construction, services & more scope for a better placed airport to sustainably gain market share and generate jobs in global air travel for generations. Direct job involvement will be measured in the tens of thousands for the projects themselves with longer term direct and indirect gains measured at least in the hundreds of thousands.
- **Facilitating Exports:** This proposal will significantly modernise the UK's transport infrastructure and enhance long term growth prospects for exports in both goods and services. Heathrow, even with a new runway, will always bump up against resistance fully optimising the capacity. A new airport in the right location will exceed Heathrow's capacity, and facilitate growth in capacity for generations. Additionally as transit customers are indifferent to the location of an airport but are rather simply focused on the ability to transfer at an existing airport, the potential to expand capacity driven by transit economics will be superior that of Heathrow.

The State Motivating the Private Sector to Work for the Economic Benefit of All: This proposal will see the state act on behalf of citizens to optimise the outcome for

transport infrastructure investment that is commercially driven, private sector funded, and ultimately the economic asset of the state. Using a concession rather than a pure private model, the state will ultimately sustain a vested economic interest in the success of the new hub airport. This is a market friendly solution that increases the state's responsibility for, and ownership of, a crucial infrastructure asset. The state has the capacity to achieve this outcome despite the fact that Heathrow is privately owned.

Politically palatable even in a polarized society

This proposal is non-ideological and non-partisan. With a major constituency whose quality of life will improve environmentally from the shift, the private sector driving the investment, massive job growth potential, and the state ultimately taking ownership of the asset, this is a rare project that can bring together a coalition of advocates that span the political spectrum. Despite a good amount of cross society opposition to the expansion of Heathrow, what ultimately catalyzed the decision was a parliament distracted by Brexit and focused only on the need for new capacity and the job growth the project brings. In comparison to one new runway at Heathrow, this proposal delivers both capacity and job growth in spades while also incorporating the needs of many of the constituents that were against the expansion of Heathrow. In this polarized society, this project has a unique ability to galvanize a broad number of political constituencies. It is only the existing vested interests and anti-growth environmentalists that that need to be managed.

Resistance is selfish

Heathrow is not listed on the stock exchange nor are any of the owners FTSE listed businesses. Yes, individual airlines that are well entrenched at Heathrow will fight this, but that is not because of the impact this transition will have on jobs, rather it is because of the potential increase in competition that a new airport will create for their businesses in isolation. Without question, a new airport and the redevelopment of Heathrow for housing will add exponentially more jobs than a single runway extension at Heathrow. Additionally, with the increased competition, consumers will benefit economically from the more expansive airport while taxpayers and the state will benefit from the ability to sell the operating rights of the new airport every few decades. While parliament rightfully understood a Heathrow expansion was more economically advantageous than an extension at Gatwick, that comparison was sub-par. Had they had the opportunity to vote on a new airport and the redevelopment of Heathrow for housing, a Heathrow expansion would have paled in comparison to an optimal outcome for consumers, taxpayers, the state, London residents and the long term logistics advantages to the overall economy that this proposal brings. Properly articulated and backed by political actors, this proposal is arguably much more capable of gaining broad based support and ultimate success, than many would instinctually think.

A Truly Transformational Project...if policy makers have vision & will power

If successful, this proposal to redevelop Heathrow and build a new airport will be a significant direct and indirect job-creator. It will have a significant positive impact on London's housing shortage, it will allow the UK to create a cutting edge environmentally friendly "new" city, it will also help London to diversify beyond its existing Central core, and it will put a sizeable, cutting edge transformational infrastructure asset outside the M25. There is plenty on offer. The problem with this transformational project is it inevitably will face resistance from the entrenched beneficiaries of Heathrow's ongoing operations and a general popular view that Heathrow works well as it is, why change it?

Transformational Change require more than just policy motivations

Government policies can incentivize and dis-incentivise economic behaviours, but to truly be transformational they have to disrupt uncompetitive entrenched economic interests. The Big Bang, mass-privatisations and the opening up of regulated monopolies achieved these transformational thresholds. Yet more recently reforms have been less disruptive and more focused on broad macro tax, regulatory and savings policies that change and improve the math of investment decisions, but do not create definitive economic opportunity or transform the competitive landscape. Truly transformational economic change is less politically feasible as it requires disruption of the widely accepted status quo, and more likely disruption of hugely powerful vested interests. With the decision to expand Heathrow and the inertia of the traditional embrace of the status quo, this project will likely not happen. But should we ever have a PM that has the political ability to guide us successfully beyond Brexit, that individual is likely to have both the political capital and capability to own a transformational project of this scale. Theresa May's government passed the Heathrow expansion, she will not be remembered fondly because of it. Whoever reverses her decision and embraces transformational change rather than incremental expansion of the status quo, are likely to be seen a few more biographies written about them.

Closing Heathrow's cost benefit is not pie in the sky, it's jam on the ground

The knee-jerk response of most to a call to close Heathrow is, at its most diplomatic, "Pie in the Sky" to this well-intentioned but clearly misguided proposal. But take a step back and think about Heathrow's costs and benefits. Its value is receiving and launching planes into the air – something that can happen anywhere so long as it is convenient for the population using the airport. Transit passengers? They have no interest in where they are landing, they just need the connections. So long as there is an overall net increase in capacity at the region's leading airport, then the opportunity for "London" to sustain its market share and indeed grow it with transit passengers is resolved. The transit hub argument favours Heathrow if the debate is just about expanding capacity at existing airports, but it no longer favours Heathrow if the region ends up with a larger, new airport elsewhere.

If Heathrow were a factory needing expansion, it would be moved elsewhere

So, the only question is does Heathrow offer more value to London and the UK broadly where it is? Or elsewhere? If Heathrow were a growing company with an 80 year old factory location reaching peak capacity, the decision would be easy. Weighed against the capacity

needs, the opportunity cost of the existing land and the cost of expansion, they would simply decide to build a more efficient, larger factory elsewhere. Nine times out of ten, they would cash in on the development value of their land, and move further beyond the city. If Heathrow's existing owners had a guarantee they could take their existing passengers with them, they themselves are unlikely to have endorsed their expansion. However as they know a new airport will not be automatically theirs, they took an economically rational decision in their own right, to fight for their ability to expand the present facility.

While airports need to attract customers, they do not need to be in city centres – that is just an historic legacy and not in the best interests of urban planners. Airports just need to be broadly accessible enough via roads and public transport for the pool of customers. All else equal, customers will tend to weigh price vs convenience when choosing an airport (and time of travel). But in countries and cities where consumers have no choice, so long as a minimum threshold of convenience is achieved (something that would be reflected in the decision on the location of the new airport), travel plans between two cities for business or pleasure will not be cancelled due to extended but still reasonable commute times. Heathrow's existing location is not a benchmark for choosing where London's hub airport should be. Indeed this is arguably one of those rare scenarios when politicians can have an alignment of interests with the market as the it is the entirety of their constituency that needs to feel the new airport is properly located. There is no fundamental reason to assume that the state, in consultation with the private sector, cannot choose the optimal location for this new "factory" for air logistics.

We all know: if planned today, Heathrow would not be in the M25

Clearly if London had a clean slate to plan its airport infrastructure, it would not have such a large airport on such valuable, populated land. Just as urban planners (should) seek to minimise citizens' exposure to noisy, polluting facilities (like cement plants), the same can be said for airports and overhead flight paths. Polluting power plants are often (selfishly) put on country borders or on the coast. The ideal location for an airport combines that environmental desire to reduce the pollution exposure of the respective country's citizens, with the need for direct access to the airport from the urban population and relevant business interests. It is probably evident that there are plenty of better locations either on existing or reclaimed land where flight paths will be over open water. The question then is simply to weigh the cost benefit analysis of moving Heathrow. This paper argues that the cost benefit analysis of closing Heathrow is, for UK inc – tremendously positive. The problem however is that the structure of UK airport ownership and the nature of the industry mean that while the cost benefit analysis of closing Heathrow is positive for the UK economy, it is a non-starter for its existing owner as they own a static physical asset, not a brand where they can simply switch production locations. To get turn this NPV enhancing proposal for the UK economy across the line, it requires proactive government policy to make it happen in a way that stimulates the desired private sector response. Two things must occur:

1. The existing owners of Heathrow must believe it is in their economic interest to sell Heathrow to developers (or to develop it themselves)
2. The private sector must be motivated to fund and build a new airport.

Both goals are entirely achievable, but they will not happen unless the state provides a guiding hand.

Redeveloping Heathrow – the Math Adds Up

The idea is to shut down Heathrow Airport and to redevelop it into a new, concentrated urban residential area adds up commercially. The calculus is simple. The scale of land, with its exceptional transport links and proximity to Central London, makes it exceptionally valuable for urban development. Based on the link to this report <https://www.london.gov.uk/sites/default/files/chapter4-economic-evidence-base-2016.pdf>, the value of land zoned for residential use in Hounslow, despite being next to the airport, was £8.8mn per hectare in 2016. Naturally with the airport shut and the redevelopment to optimise the residential quality of life vis a vis residential concentration and ease of access to central London, it is possible that land values in Hounslow could become as valuable as Ealing (£12.8mn per hectare). Indeed, it seems reasonable the opportunity to develop a cutting-edge urban area with government permissions to build optimally, could be valued at in the ballpark of the average for the London average (£15.7mn). This area should be planned in a way that could encompass the best combination of residential, office, commercial and green spaces. This should mean the hub potential of “Heathrowpolis” will have agglomeration benefits that allow it to compete with areas that are considerably more central in terms of desirability.

Heathrow Land alone should be worth at least £13.5bn

Heathrow currently encompasses 1,227 hectares (one-fifth the size of Manhattan). On the view arteries and transport links can be put underground and structural changes to retail markets will reduce the need for retail sales area, the scope to monetize a high % of the land is better than average. Assuming 30% is for public space and infrastructure and assuming the £15.7mn per hectare London average for land for residential development, the value of Heathrow alone for developers would be £13.5bn. Assuming some of the existing buildings could be useful as office/retail and entertainment complexes (Terminal 5 as an indoor branded theme park?), the value of those respective hectares would be multiples higher. While this land value alone does not cover the operational value of Heathrow as an airport, two responses are possible. One, is the more aggressive approach arguing Heathrow has no perpetuity right to operate Heathrow as an airport irrespective of environmental considerations. Second, would be to properly compensate the existing owners for the difference in value via an economic stake in the new airport concession.

New Heathrow can house over 300,000 citizens

Based on the Oxford, Cambridge, MK Corridor, guidance is for 14,000 habitants per square kilometre for a new city. At that ratio, Heathrowpolis would house 171,000 people with space for commercial, retail and infrastructure. Yet as this is within the M25 with pre-existing exceptional transport links, this could be a very densely populated area (although if properly planned offering extremely high quality of life). In Manhattan there are 26,000 people per square kilometre (despite a huge concentration of office space). Matching this, Heathrowpolis, could have comfortably in excess of 300,000 inhabitants even without adjusting for the disproportionate focus on office space in Manhattan.

50,000 New Jobs and Counting...

Excluding the huge uplift in construction jobs, it is calculated that every 1,000 increase in the resident population creates 171 new jobs. For New Heathrow a net addition of 300,000 residents would equate to 51,300 permanent jobs. That itself is two-thirds the level of jobs at the existing Heathrow airport. Assuming the new mega airport hub would have an equal number of jobs that Heathrow now has (with capacity expansion being adjusted down for automation), this would be a net increase in jobs equivalent to all the employees in the Royal Airforce and BBC combined. That is even before factoring in the companies that may opt to locate in Heathrowpolis.

Heathrowpolis will optimise residential densities

Currently in London, 50% of buildings are 1 or 2 stories, and 75% are 3 stories or less. In Heathrowpolis, the exact opposite should be the case. As seen in the link below, this does not require high rise, but liveable mid-rise buildings with courtyards could prove the standard <https://www.building.co.uk/technical-case-studies/housing-density-does-it-stack-up/5092832.article>. If there is any potential area where London can build more intensively and higher, for high quality of life but affordable residential use, it is Heathrowpolis. Even before Crossrail, Heathrow can handle over 213,000 commuting passengers and 76,000 workers a day. With Cross-rail it presents an exceptional opportunity to build with the highest residential population concentration in the UK and considerable office space. This scale alone should then become self-sustaining as an urban centre – effectively diversifying the employment opportunities of London westward. The 51,000 jobs are in the service sector. It is possible that with office moves to respond to the population concentration and cutting-edge nature of the area, job creation could be substantially greater. This will also lead to enhanced economic activity in the areas on Cross-Rail that are west of Heathrow.

Carbon efficiency – this plan will make a difference

The New Airport should be one of the most advanced, cutting edge transport hubs in the world. Naturally planners for the new airport will focus on a reduced carbon footprint in the construction of facilities. Much of the gain can come from the efficiency of bespoke transport options to and from the airport (dedicated zero emission motorway links?). However, the big carbon positive impact of this overall proposal will likely be in terms of the low carbon footprint planning of the new city on the redeveloped Heathrow. It should be viewed as an opportunity for the UK to build an urban concentration that is optimal from an: environmental; technological; transport; below and above ground land optimisation; quality of life; and efficiency perspective – it should be the template for all new greenfield or large brownfield development in cities globally.

The UK can breathe easier with a new airport

Yet more tangibly for UK citizens, the new airport will offer direct environmental benefits that will be heard and breathed by UK citizens. This should be an important selling point to gaining public acceptance. This is simply due to the removal of a major airport and all the associated over city flights and the associated noise and particle pollution. Of additional import would be the removal of all the congestion associated with the use of one of the

world's busiest airports so close to the city. This should reduce the carbon footprint on a per capita basis as efficiency of existing transport to Heathrow becomes more focused on daily work commutes, rather than airport oriented road traffic.

Thatcher's mistake: airports better sold as concession than fully privatised

In 1986, had Thatcher's government privatised the operation of Heathrow under a 40-year concession, rather than an outright privatisation, the only decision maker regarding the future of Heathrow from the year 2026 would be the government, not the existing operators. This was a mistake of the Thatcher government as she could have received cashflow and all the operational benefits of private operations – while retaining government ownership of airports. However, the economic value of Heathrow is owned by the private sector making this decision more complicated. Still, with some policy making creativity and government willingness to use its power, it is both feasible...and desirable.

As mentioned, the land alone in Heathrow should be worth at least £13bn (assuming 500k habitable rooms and 100,000 per habitable room the developed value would be at least £50bn). The current multiples that the market puts on bond like cashflows means that Heathrow's near £2bn of EBITDA probably means it is worth upwards of £40bn. However, it is important to understand that the owners of Heathrow have no contractual right to that valuation. Were the state to decide the emissions or noise pollution required a limitation of the number of takeoffs and landing within the M25, then there is little the owners of Heathrow could do beyond lobby to keep polluting to retain their "fair" valuation.

The State has the capacity to facilitate Heathrow's agreement

The existing owners of Heathrow, having the ability to "transfer" existing traffic from Heathrow to the completed new facility, can in theory get the most value out of the new airport concession (other operators would have to compete with a still operating Heathrow). This requires a compromise solution that responds to the need for the value of the existing capacity of Heathrow to be retained by the existing owners of Heathrow. This would not just pass the economic value of rezoning Heathrow, but the state could offer a tradeable discount to the existing owners offsettable against construction costs of the new airport. Should the government not wish to fund this upfront, this could be traded for additional years of operation of the new airport before it is retendered. Of course the existing consortium owners and BA will not be happy with this, but if the world was run based on the vested interests of the status quo, scarcely a policy choice would be made that would benefit consumers or the environment. This proposal does both.

Taxpayers won't pay for the new airport, or Heathrow's redevelopment

The beauty of this proposal is that the new airport will be tendered on a build operate transfer agreement. Bidders will be given the spec, and they will then bid based on the number of years they will operate the new airport. This not only means capital costs for the new airport (although not feeder infrastructure) are paid for by the new operator, but they will also be incentivized to finish it as soon as possible as the clock on their operating rights will start ticking from the day they win the tender (the government will have pre-cleared planning consent). As they will also likely operate the airport for decades, they will also be

responsible for any deficiencies in the construction. And at the end of the concession period, the government will then get the economic benefit of re-tendering the operating rights. While it will remain private sector run, the government will have effectively reclaimed the ownership of the UK's largest airport. Despite arguably being called a "re-nationalisation," this is a hugely market motivated investment with very low risk or obligation for the tax payer (some transport, perhaps some tax breaks etc). Again, it will be fought by vested interests, but with such massive investment, there will also be substantial scope for patronage (for lack of a better word). This is not net hostile to the private sector, it is just important that existing owners are treated with legal respect and economic respect. The construction industry and unions should be hugely supportive as should the potential new operators and airline beneficiaries of the new airport. Yes, leading existing airline operators and may fight this. However, if the net impact for the UK is greater airport capacity with a sustainable growth trajectory, arguments against this will have little foundation from a macro-economic or competitive perspective. Instead resistance will probably be based on an understandable, selfish desire of companies that are existing beneficiaries of the status quo, to sustain their advantage. Ultimately, this will be a hugely positive development for the airport and airline industry as a whole in the UK.

Window of Urgency before new runway deadline...sound familiar?

Before the new runway is built at Heathrow, the UK has a window of opportunity to make a decision that will be fundamentally transformational to the UK economy from an economic, a housing, and an environmental perspective. It will require the state to take a slightly aggressive legal stance to defend its right to urban and transport planning, but if they leverage the power that single party majority governments have proven they have to fundamentally alter the outlook for Britain - it can be done.