Finance Committee

Date: **5 December 2017**

Item: **TfL Energy Purchasing 2020 to 2023**

This paper will be considered in public

1 Summary

1.1 This paper reviews the current purchasing strategy for the supply of electricity and gas to all applicable TfL supply points through the Crown Commercial Service (CCS) agreed frameworks, and outlines the key elements of developing an energy cost and carbon reduction plan, of which working with CCS forms a key part. The paper seeks approval of Procurement Authority of £655m for the purchase of electricity and natural gas from 2020 to 2023 across TfL, under frameworks to be let by the CSS.

1.2 An initial paper was submitted to the meeting of the Finance Committee on 18 October 2017.

1.3 A paper is included on Part 2 of the agenda, which contains exempt supplementary information. The information is exempt by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that information must take place after the press and public have been excluded from this meeting.

2 Recommendation

2.1 **The Committee is asked to note the paper and the supplemental information on Part 2 of the agenda and approve Procurement Authority of £655m for the purchase of electricity and natural gas from 2020 to 2023 across TfL, under frameworks to be let by the Crown Commercial Service**.

3 Energy Cost and Carbon Reduction

3.1 We are developing a strategy for energy cost and carbon reduction, with the following key objectives:

(a) optimising the price TfL pays for energy, as set out in this paper;

(b) minimising any increase in the amount of energy TfL consumes in delivering enhanced services, for example through focusing on an energy neutral upgrade of the Deep Tube; and

(c) reducing the carbon intensity of the energy TfL consumes, for example through installing solar energy generation across our estate.

3.2 These objectives are driven by the following factors:

(a) as part of the Mayor's ambition for London to be zero carbon by 2050, the draft London Environment Strategy requires TfL to investigate opportunities to decarbonise its rail services, with the aim of achieving a zero carbon network by 2030. This will include pursuing options to power services through local renewable generation in London and using procurement options to increase the provision of renewable energy,

(b) the draft Mayor's Transport Strategy also requires TfL to ensure that new Tube trains rolled out from the mid-2020s on the Piccadilly, Waterloo & City, Bakerloo and Central lines will be energy efficient, allowing a faster, more frequent service on the lines, with as little as possible additional energy required; and

(c) energy costs are forecasted to rise, predominantly driven by the increase in pass through levies and taxes. Approximately 50 per cent of the fully delivered cost of grid electricity is now made up of these, termed Non-Energy Costs (NECs), and they cannot be avoided unless the energy is generated and delivered without the use of the public transmission and distribution network.

4 Background

4.1 TfL has an annual aggregated requirement for the supply of ~1650 Gigawatt-hours (GWhs) of electricity and ~80 GWhs of natural gas. While TfL is a modest consumer of natural gas, TfL is London's single largest consumer of electricity and among the top users in the UK.

4.2 For energy purchasing TfL has been fully utilising the procurement services and frameworks of the Crown Commercial Service since 2013, which has enabled TfL to have additional commercial leverage by subscribing to the largest buyer of energy in the UK and aggregating its volume with other public sector organisations.

4.3 In line with the TfL energy risk management approach, the contract covering the delivery period from April 2020 to March 2023 will require TfL's commitment by mid December 2017 to ensure continuity with TfL's minimum rolling 30 month purchasing horizon.

4.4 CCS energy supply frameworks are four years in duration. EDF Energy is currently the main electricity framework provider (up to April 2019) and Corona Energy the gas framework provider for the same period. These frameworks are being prepared for tender for the four-year period from April 2019 and, in common with other large CCS customers, TfL will be involved in their evaluation and award. TfL in turn has a contract with CCS that enables TfL to access the frameworks and sign pre-agreed supply contracts with the chosen framework supplier (see diagram in Appendix 1).

4.5 The projected outturn value is £623m. Due to the volatile nature of wholesale energy markets and the potential for unexpected changes in regulatory costs, the estimated outturn value may be exceeded. This paper therefore requests procurement authority for £655m, which includes headroom of approximately 5 per cent to cover additional costs arising from increases in the wholesale market and regulated pass-through charges.

5 Crown Commercial Service

5.1 CCS risk manages energy purchases for all central government, the Metropolitan Police Service, London Fire and Emergency Planning Authority, more than 130 local authorities, approximately 85 per cent of the NHS in England and many other organisations across the public sector including the not-for-profit sector, housing associations, education and emergency services.

5.2 CCS leverages its position and aggregates customer volumes to deliver sustainable savings and innovative solutions and to provide an enhanced managed service delivering value directly to its customers. It explores virtual integration of the supply chain through direct generation opportunities and hedging strategies of over 20 year time horizons.

5.3 In total CCS is responsible for the procurement and delivery of over £2bn per annum of energy across the public sector, and since April 2012 secured savings for the public sector of £532m:

Financial Year	**†Savings**
2012/13	£110m
2013/14	£109m
2014/15	£98m
2015/16	£121m
2016/17	£94m
Total	**£532m**

†All savings generated through the use of CCS are supported by agreed benefits methodologies, which are formally approved and audited by the Cabinet Office.

5.4 By combining customer volumes, CCS is able to exert greater buying power in the marketplace and reduce charges/costs incurred through supplier margin, bid/offer spread and brokerage fees. TfL saves circa £6.3m per annum through this benefit of aggregation with the wider public sector.

5.5 The aggregation of volume with other public sector customers creates further load-shaping benefits for TfL by reducing the relative proportion of more expensive peak volume versus cheaper baseload volume. This together with a reduction in residual volume further reduces TfL's expenditure by circa £1.18m per annum.

5.6 On average and based on the last four years trading performance, CCS has out performed the market traded average by 3.35 per cent for power and 5.47 per cent for natural gas. This delivers an annualised saving of £2.85m per annum for TfL.

TfL CCS Benefit Summary	Savings
Aggregation	£6.30m
††Trading Performance	£2.85m
Load-Shaping (residual)	£1.18m
Total	**£10.33m per annum**

††Annualised performance based on 4 year average. Figures provided by CCS in accordance with agreed benefits methodologies.

6 CCS Risk Management

6.1 As the largest aggregator of gas and electricity in the UK, CCS has skilled in-house market analysts and risk management specialists and has robust independent governance procedures in place.

6.2 The CCS frameworks offer a number of risk management products for its customers. The current proposal is that TfL continues to use the product it has used to date and comprises a minimum 30 month purchasing window ahead of delivery i.e. from October 2018 CCS will be looking to procure electricity and gas in respect of the year commencing in April 2021.

6.3 The product incorporates a minimum volume profile that CCS must purchase in order to provide minimum coverage levels closer to delivery; this is designed to mitigate the impact of wholesale market price spikes.

6.4 This strategy is complemented by a stop loss, a mechanism which limits customers' exposure to wholesale electricity and gas price volatility where market prices reach a certain threshold.

6.5 CCS also has the ability to un-lock/sell back previously hedged volumes, if it believes the market fundamentals indicate potential upside. This mechanism is currently limited to small transactions and operated within the stop loss parameters as amended from time to time and approved by the CCS External Risk and Governance Board made up of key customers such as the MoD, NHS, Metropolitan Police, Department for Work and Pensions, the Highway Agency, and TfL.

6.6 CCS continues to develop and optimise its strategy with periodic strategy workshops attended by the CCS energy trading, strategy team and some of the key customers set out above.

7 Contractual Arrangements

7.1 The CCS framework agreements are competitively tendered and open to all public sector organisations outlined in paragraph 5.1, including TfL.

7.2 The CCS contract with TfL allows for termination in limited circumstances (such as in respect of material breach and in the circumstances set out in paragraph 7.3). Any termination outside of this would be subject to the agreement of CCS and likely to involve a financial penalty. In such a scenario, TfL would have to award an alternative supply contract and energy risk manager, which is considered likely to take approximately six to 12 months to procure.

7.3 The CCS contract allows TfL to give notice each October of its intention to terminate the agreement if it does not wish to roll forward to the next 30-month horizon; if such a notice is not given the arrangement rolls forward automatically. To accommodate the timing of a decision on this paper, CCS has specifically agreed that TfL will need to serve such a notice by the end of December 2017 if it does not wish to participate in the April 2020 procurement round. The CCS contract does, however, allow TfL to reduce or increase its overall volume requirement prior to delivery without attracting a financial penalty.

8 Environmental

8.1 Currently all electricity purchased by TfL through the CCS framework is standard grid mix. Previously TfL had purchased its non-traction electricity as renewable 'green tariff' which at the time was exempt from Climate Change Levy (CCL) but attracted a premium equivalent to the cost of CCL thus resulting in a cost-neutral position.

8.2 Due to legislation changes, renewable grid energy is no longer CCL exempt but still attracts a premium. Therefore, purchasing renewable energy for the entire portfolio for today's requirement would add approximately £660,000 to the annual electricity bill. This option has not been exercised but remains available during the contract period.

8.3 Under Defra reporting guidelines, regardless of where the energy is sourced, the carbon content of any energy delivered via the grid has to be reported at the prevailing grid average carbon intensity. Therefore, any purchase of the above 'green tariff' would not reduce TfL's reportable carbon emissions.

9 Financial

9.1 Based on the forward wholesale market price and Department of Business Energy and Industrial Strategy (BEIS) price projections, for the period starting April 2020 ending March 2023 the expected outturn is £623m. NECs (taxes, environmental levies, transportation and distribution costs are increased in line with TfL Business Plan guidelines and contribute over 50 per cent of the above total (see breakdown in Appendix 2). The cost evolution of the main NEC's versus the baseload commodity is detailed in Appendix 3.

9.2 CCS offers a transparent not-for-profit service. The cost of using CCS is approximately £96,000 per annum. This fee includes tendering, evaluation and award of supply contracts, strategy development and optimisation, energy purchasing through the CCS trading desk, and portfolio management and assistance from the CCS site administration team.

10 Alternative

10.1 The main alternative to remaining with CCS is to tender this requirement direct to the supply market with the likely respondents being the 'Big Six' energy suppliers. This would enable TfL to evaluate and award to a supplier of its choice and to select an alternative risk management strategy should it wish to do so.

10.2 While this option would give TfL a greater level of control, the disaggregation of TfL's volume from CCS volumes and the adjustment in relative proportion of peak time usage would result in TfL paying more than necessary for its energy. TfL may also be unable to achieve the same level of flexibility on volume tolerance, which could hinder any future directly connected low carbon sourcing opportunity. In addition, TfL would see an increase in risk management cost and associated services.

10.3 A further alternative would be to source multiple direct connections with local generators, but this would not be practicable or cost effective for 100 per cent of TfL volume. TfL is currently investigating sourcing medium scale low carbon direct connections and self-generation to complement the CCS strategy and TfL's carbon reduction objectives where it is cost effective to do so.

10.4 TfL Treasury has reviewed the current energy purchasing strategy, explored alternative hedging options, and concluded the existing hedging arrangements with CCS offer significant benefits and TfL should not engage in any alternative or additional hedging for energy at this time.

List of appendices to this report:

Appendix 1 – CCS Contractual Relationship Diagram
Appendix 2 – CCS Forecast Spend Financial Years 2020-2023
Appendix 3 – Price evolution of NECs versus the wholesale market
Appendix 4 – Glossary of NECs

Exempt supplemental information is included in a paper on Part 2 of the agenda.

List of Background Papers:

TfL Board Report of 19 December 2012 – TfL Energy Purchasing 2014 - 2017
TfL Board Report of 5 November 2014 – TL Energy Purchasing 2017 - 2020

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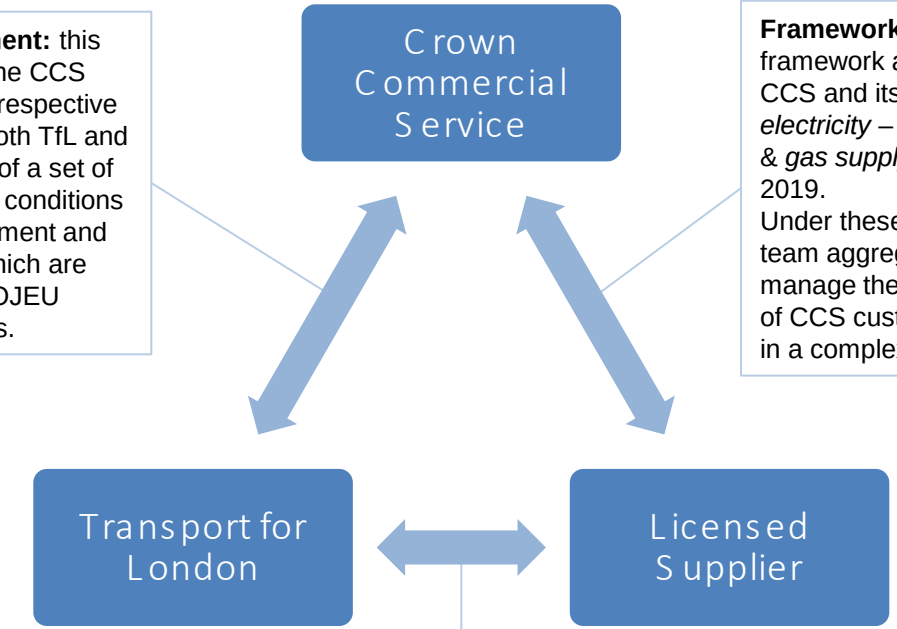
Scope

Customer Access Agreement: this gives TfL the right to use the CCS frameworks and sets out the respective rights and responsibilities of both TfL and CCS. The agreement is part of a set of documents and dovetails with conditions in both the framework agreement and supply contract, each of which are compiled as part of the OJEU procurement process.



Framework Agreement: a single supplier framework agreement is in place between CCS and its suppliers for each contract type: *electricity* – currently with EDF to March 2019 & *gas supply* – currently with Corona to March 2019.
Under these frameworks the CCS trading team aggregate customer volumes and manage the execution of trading on the behalf of CCS customers to deliver value for money in a complex, fast moving marketplace.

Model Contract: where TfL wishes to purchase energy through the framework it must complete a supply contract with the relevant framework supplier.

Appendix 2

	Volume			Forecasted Outturn		
Business Area	2020/21 MWh	2021/22 MWh	22/23 MWh	2020/21 £m	2021/22 £m	2022/23 £m
Rail and Underground - Traction	**1,362,895**	**1,423,447**	**1,466,568**	**145.4**	**162.8**	**179.9**
Rail and Underground - Non Traction	**200,197**	**200,197**	**200,197**	**25.5**	**27.0**	**27.3**
Surface Transport	**105,694**	**105,694**	**105,694**	**13.4**	**14.3**	**14.4**
Transport Trading	**32,635**	**32,635**	**32,635**	**4.2**	**4.4**	**4.5**
				188.5	208.5	226.1
						623.1

Notes:

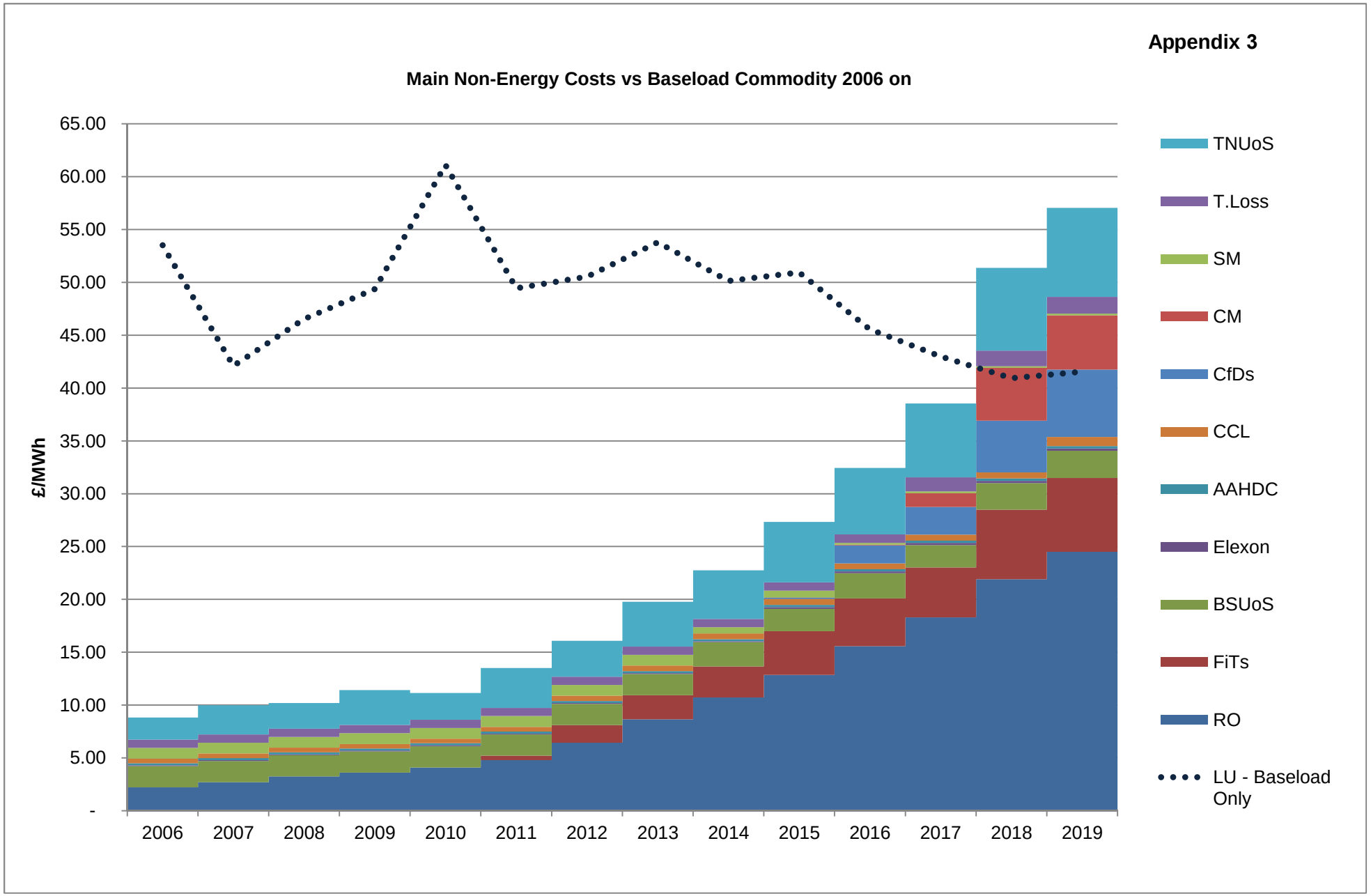
Forecast based on Department for Business Energy and Industrial Strategy (BEIS) Energy & Emissions Projection dated 15 March 2017.

BEIS Reference Scenario adjusted to TfL Financial years and inflated as per business planning guidelines.

Traction forecast based on current Working Timetable planned updates

Non Traction, Surface Transport and Transport Trading based on 2018 Financial year consumption.

Appendix 3


Main Non-Energy Costs vs Baseload Commodity 2006 on
£/MWh
65.00
60.00
55.00
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
-
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
TNUoS
T.Loss
SM
CM
CfDs
CCL
AAHDC
Elexon
BSUoS
FiTs
RO
LU - Baseload Only

Glossary of Non Energy Costs (NECs)

TNUoS – Transmission Use of System

Charged by the transmission network for carrying electricity from power-stations

T.Loss – Transmission Loss

Charge for electrical Losses incurred in the Transmission Network

SM – Supplier Margin

CM – Capacity Market

A charge for supporting both generators, who invest and agree to generate electricity, and large users, who agree to reduce electricity consumption, to ensure there is enough capacity at times when demand is high and the network needs it most

CfDs – Contract for Difference

A charge for the government initiative that encourages investment in low-carbon generation by providing investors a guaranteed income for the electricity they generate

CCL – Climate Change Levy

Environmental tax on commercial energy use

AAHDC – Assistance for Areas with High Distribution Cost

To help offset the high electricity prices in the North Scotland area, where distribution costs are significantly higher than in any other area of Britain

Elexon – Settlement Charges

Funds for administering the wholesale electricity and settlement arrangements and the associated documentation

BSUoS – Balancing System Use of System

Mechanism which National Grid uses to recover costs incurred in balancing electricity demand and generation

FiTs – Feed in Tariffs

Charges to incentivise customers to produce green energy, consist of Generation and Export Tariffs

RO – Renewable Obligation

An obligation on UK suppliers of electricity to source an increasing proportion of their electricity from renewable sources

Baseload

Power for delivery 24 hours a day - 7 days a week