State of California AIR RESOURCES BOARD

PROPOSED INNOVATIVE CLEAN TRANSIT REGULATION A REPLACEMENT OF THE FLEET RULE FOR TRANSIT AGENCIES

Resolution 18-60

December 14, 2018

Agenda Item No.: 18-10-8

WHEREAS, sections 39600 and 39601 of the Health and Safety Code authorize the California Air Resources Board (CARB or Board) to adopt standards, rules, and regulations and to do such acts as may be necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, sections 39002 and 39003 of the Health and Safety Code charge the Board with the responsibility for systematically attacking the serious air pollution problem caused by motor vehicles;

WHEREAS, sections 39500 and 40000 of the Health and Safety Code designate CARB as the agency responsible for control of emissions from motor vehicles;

WHEREAS, in section 39650 of the Health and Safety Code, the Legislature declares that it is the public policy of the state that emissions of toxic air contaminants should be controlled to levels which prevent harm to the public health;

WHEREAS, sections 39655, 39658 and 39659 of the Health and Safety Code authorizes the Board to establish airborne toxic control measures for toxic air contaminants;

WHEREAS, section 39667 of the Health and Safety Code authorizes the Board to regulate emissions of toxic air contaminants from vehicular sources;

WHEREAS, in section 43000.5 of the Health and Safety Code, the Legislature declares that the burden for achieving needed reductions in vehicle emissions should be distributed equitably among various classes of vehicles, and the Board should take immediate action to implement both short- and long-range programs of across-the-board reductions in vehicle emissions and smoke;

WHEREAS, sections 43013, 43100, 43101, 43102, 43104, and 43806 of the Health and Safety Code authorize the Board to adopt emission standards, in-use performance standards, and test procedures to control air pollution caused by motor vehicles; WHEREAS, sections 39012 and 39606 of the Health and Safety Code authorize the Board to adopt standards of ambient air quality for each air basin in consideration of the public health, safety, and welfare, including, but not limited to, health, illness, irritation to the senses, aesthetic value, interference with visibility, and effects on the economy;

WHEREAS, section 43018 of the Health and Safety Code authorizes the Board to achieve the maximum degree of emission reduction possible from vehicular and other mobile sources in order to accomplish the attainment of the state standards for ambient air quality at the earliest practicable date;

WHEREAS, section 43105 of the Health and Safety Code provides that no new motor vehicle or engine required under Part 5 of Division 26 of the Health and Safety Code to meet emission standards shall be sold to the ultimate purchaser, ordered or delivered for sale to the ultimate purchaser, or registered in this state, if the manufacturer has violated emission standards or test procedures and has failed to take corrective action, which may include recall of vehicles or engines, specified by the Board in accordance with its regulations; and provides that the Board shall establish procedures for determining, and the facts constituting, compliance or failure of compliance pursuant to section 43105;

WHEREAS, section 43106 of the Health and Safety Code provides that each new motor vehicle or engine required under Part 5 of Division 26 of the Health and Safety Code to meet the emission standards established pursuant to section 43101 shall be, in all material respects substantially the same in construction as the test motor vehicle or engine that has been certified by the Board in accordance with Article 1, Chapter 2, Part 5, Division 26 of the Health and Safety Code;

WHEREAS, section 43701, subdivision (b), of the Health and Safety Code directs the Board, in consultation with the State Energy Resources Conservation and Development Commission, and after a public hearing, to adopt regulations that require that heavy-duty diesel motor vehicles subject to subdivision (a) of section 43701 to utilize emission control equipment and alternative fuels;

WHEREAS, in section 43801 of the Health and Safety Code, the Legislature declares that emission of air pollutants from motor vehicles is a major contributor to air pollution within the State of California and, therefore, declares its policy to encourage the development and testing of various types of low-emission motor vehicles, which would contribute substantially to achieving a pure and healthy atmosphere for the people of this state;

WHEREAS, the Legislature has enacted the California Global Warming Solutions Act of 2006 (Assembly Bill 32 (AB 32), stats. 2006, ch. 488, Health & Saf. Code § 38500, *et seq.*), which declares that global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California, and requires a comprehensive multi-year program to reduce California's greenhouse gas

(GHG) emissions to 1990 levels by 2020, and to maintain the emission levels and continue reductions thereafter;

WHEREAS, AB 32 added section 38501 to the Health and Safety Code, which expresses the Legislature's findings that global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California, and the Legislature's intent that CARB coordinate with state agencies and consult with the environmental justice community, industry sectors, business groups, academic institutions, environmental organizations, and other stakeholders in implementing AB 32, and design emissions reduction measures to meet the statewide emissions limits for GHGs in a manner that minimizes costs and maximizes benefits for California's economy, maximizes additional environmental and economic co-benefits for California, and complements the State's efforts to improve air quality;

WHEREAS, section 38510 of the Health and Safety Code designates CARB as the State agency charged with monitoring and regulating sources of GHG emissions that cause global warming in order to reduce such emissions;

WHEREAS, section 38560 of the Health and Safety Code directs the Board to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG emission reductions from sources or categories of sources;

WHEREAS, Senate Bill 32 (SB 32, stats. 2016, ch. 249), was signed into law to expand upon the California Global Warming Solutions Act of 2006 to reduce GHG emissions to 40 percent below the 1990 level by 2030;

WHEREAS, in recognition of the devastating impacts of climate change emissions on California, Governor Arnold Schwarzenegger, in June 2005, signed Executive Order S-3-05, June 1, 2005, which established the following GHG emission targets:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emission 80 percent below 1990 levels;

WHEREAS, Governor Edmund G. Brown Jr. in Executive Order B-16-12, March 23, 2012, reaffirmed a 2050 GHG emission reduction target for the transportation sector of 80 percent below 1990 levels;

WHEREAS, Governor Edmund G. Brown Jr. in Executive Order B-30-15, April 29, 2015, established a 2030 GHG emission reduction target of 40 percent below 1990 levels, in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050;

WHEREAS, Governor Edmund G. Brown Jr., in Executive Order B-48-18, January 26, 2018, established a goal of at least 5 million zero-emission vehicles on California roads by 2030;

WHEREAS, Governor Edmund G. Brown Jr. in Executive Order B-55-15, September 10, 2018, established a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and maintain net negative emissions thereafter;

WHEREAS, CARB's 2016 Mobile Source Strategy, May 16, 2016, identifies several potential technology advancing measures needed to achieve California's air quality and climate goals, including measures to accelerate the deployment of zero-emission buses and a low-NOx emission standard;

WHEREAS, In March 2017, the Board adopted the State Strategy for the State Implementation Plan, which identifies the deployment of zero-emission buses as a necessary component for California to achieve established near- and long- term air quality and climate mitigation targets (Resolution 17-7, March 23, 2017);

WHEREAS, in December 2017, the Board adopted California's 2017 Climate Change Scoping Plan, which recommends transition to zero-emission buses as a measure to meet the State's GHG emissions and air quality goals and enable long-term decarbonization of the transportation sector (Resolution 17-46, December 14, 2017);

WHEREAS, under the current Fleet Rule for Transit Agencies originally adopted in 2000 and subsequently amended in 2004 and 2006, public transit agencies operating urban bus fleets were required to select either the diesel bus path or the alternative-fuel bus path;

WHEREAS, the 2006 amendment to the Transit Fleet Rule requires transit agencies with more than 200 urban buses to purchase zero-emission buses starting in 2011 for transit agencies that utilized the diesel path and one year later for transit agencies that utilized the alternative fuel path;

WHEREAS, the 2006 rule amendment requires an advanced demonstration of the zero-emission bus for transit agencies on the diesel path with more than 200 urban buses in active service prior to the start of the zero-emission bus purchase requirement. As a result, five transit agencies in the San Francisco Bay Area formed the Zero-Emission Bay Area (ZEBA) program. The original ZEBA program included twelve FCEBs deployed in 2010. At the time, FCEBs were the only available zero-emission technology to meet the demands of transit service. The ZEBA program added an additional FCEB to service in the fleet in late in 2015. This program has met impressive milestones and demonstrated the feasibility of incorporating ZEBs into transit fleet operation;

WHEREAS, the 2006 amendment requires CARB staff to evaluate the status of technology with the help of demonstration projects and report back to the Board by July 2009;

WHEREAS, in 2009, CARB staff presented zero-emission bus technology evaluations to the Board and concluded that the zero-emission bus technologies were not commercially ready at that time;

WHEREAS, the Board, through Resolution 09-49, July 23, 2009, found, among other things, that technologies had not sufficiently advanced to appropriately assess commercial readiness, and that costs of zero-emission buses remained significantly higher than the target prices on which the existing fleet rule had been premised;

WHEREAS, in 2010, CARB staff issued an advisory (Mail-Out #MSC 10-04, January 29, 2010) to temporarily withhold the implementation of the purchase requirement for zero-emission buses until after CARB had developed and the Board had approved new purchase requirements based on the technology evaluation;

WHEREAS, the Board, through Resolution 09-49, July 23, 2009, found GHG reductions from transit were appropriate for the zero-emission bus regulation;

WHEREAS, GHG emission reductions can be achieved through fuel efficiency improvements and utilization of renewable energy sources;

WHEREAS, CARB staff conducted a comprehensive technology evaluation in 2015 and concluded the zero-emission bus technologies were in their early commercialization stage, and updated the Board in February 2016 at a public hearing about the status of zero-emission bus technology, price, and deployment;

WHEREAS, in the 2016 update to the Board, CARB staff discussed plans to reinstate zero-emission bus purchase requirements with the Board, including a public process on amending the rule with a broader goal of making a transition to an all zero-emission bus fleet;

WHEREAS, in collaboration with its partners, including the California Energy Commission and California Public Utilities Commission, CARB is working to accelerate development of zero-emission technology by continuing to invest in commercialization of various technologies, building on previous investments; and focusing on technology critical to meeting the state's 2030 climate and criteria emission goals; and input from stakeholders and industry is critical to developing a successful investment strategy and identify funding priorities;

WHEREAS, Assembly Bill 134 (stats. 2017, ch. 254), for fiscal year (FY) 2017-2018 appropriated up to \$180 million for the Hybrid and Zero Emission Truck and Bus Voucher Incentive Program (HVIP) program with a minimum of \$35 million set aside to

fund zero-emission buses exclusively, and an additional \$125 million allocated to the HVIP program under Senate Bill 856 (stats. 2018, ch. 30), for FY 2018-2019;

WHEREAS, on May 31, 2018, the California Public Utility Commission unanimously approved what is expected to constitute initial investments in transportation electrification infrastructure, under Senate Bill 350 (stats. 2015, ch. 547), through two large-scale medium- and heavy-duty vehicle transportation electrification programs by the Pacific Gas and Electric and Southern California Edison Companies to spend \$236 million and \$343 million, respectively, within the next five years to install infrastructure needed to support medium- and heavy-duty electric vehicles;

WHEREAS, the Low Carbon Fuel Standard (LCFS) program allows transit agencies using fuels with a lower-carbon intensity to generate LCFS credits, thereby creating an additional revenue stream for the transit agencies while stimulating the low carbon fuel market;

WHEREAS, transit agencies provide safe, affordable, and reliable transportation and are our partners in achieving clean air for sustainable transportation, and they play a vital role for transit dependent riders, especially low income and disadvantaged residents;

WHEREAS, in Resolution 18-21, May 25, 2018, CARB approved allocations for Volkswagen Environmental Trust Funds that included \$130 million for zero-emission transit, school, and shuttle bus replacements, with at least 50 percent of the allocation expected to benefit disadvantaged or low-income communities;

WHEREAS, California transit agencies have historically been pioneers in adopting advanced technologies and several of them have been successfully operating zero-emission buses for over the past two decades as part of their normal daily operations;

WHEREAS, transit buses are often operated in urban areas at low speeds and under frequent stop-and-go driving cycles, which are ideal applications for electric drivetrains with regenerative braking;

WHEREAS, since 2015, CARB staff has provided the Board and the public information and opportunities to comment on programs promoting zero-emission buses and other heavy-duty vehicles, through an informational update, three statewide workshops, five workgroup meetings, four Subcommittee meetings, various subgroup meetings, one LCFS overview meeting, three transportation electrification meetings, and one technology symposium, and meetings with numerous transit agencies;

WHEREAS, the knowledge and experience gained from deploying zero-emission bus technologies is enabling market expansion into other zero-emission heavy-duty vehicle applications;

WHEREAS, the Initial Statement of Reasons (ISOR) prepared by staff in support of the proposed Innovative Clean Transit regulation that would be a replacement of the Fleet Rule for Transit Agencies presents, among other things, the rationale and basis for the proposed regulation set forth in Appendix A to the ISOR released to the public on August 7, 2018, and identifies the data, reports, and information relied upon for these proposed regulations;

WHEREAS, CARB's regulatory program that involves the adoption, approval, amendment, or repeal of standards, rules, regulations, or plans has been certified by the Secretary for Natural Resources under Public Resources Code, section 21080.5, of the California Environmental Quality Act (CEQA) and California Code of Regulations, title 14, section 15251(d), and CARB conducts its CEQA review according to this certified program (Cal. Code Regs., tit. 17, §§ 60000-60007);

WHEREAS, CARB circulated under its certified regulatory program the *Draft Environmental Analysis Prepared for the Proposed Innovative Clean Transit Regulation* (Draft EA), as Appendix C to the Staff Report, for 45 days, from August 10, 2018, through September 24, 2018;

WHEREAS, the Draft EA concluded that implementation of the proposed Innovative Clean Transit regulation has the potential to result in the following short-term and longterm impacts: beneficial impacts to air quality (long term), energy demand, and greenhouse gases; less than significant impacts to air quality (odors), energy demand, greenhouse gases, mineral resources, population, employment and housing, public services, and recreation; and potentially significant impacts to aesthetics, agricultural and forest resources related to new facilities, air quality (short term), biological resources, cultural resources, geology and soil, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, traffic and transportation, and utilities and services systems, and that the potentially significant and unavoidable adverse impacts are primarily related to short-term, construction-related activities, and that this explains why some resource areas are identified above as having both less-than-significant impacts and potentially significant impacts;

WHEREAS, on September 28, 2017, the Board conducted a public hearing on the proposed Innovative Clean Transit regulation and the Draft EA;

WHEREAS, following the public hearing, the Board authorized the Executive Officer to make the modified regulatory language in Attachment A, and any additional appropriate conforming modifications, available for public comment, with any additional supporting documents and information, for a period of at least 15 days, and further directed the Executive Officer to consider written comments submitted during the public review period and make any additional appropriate conforming modifications available for public comment for at least 15 days; to evaluate all comments received during the public comment periods, including comments on the Draft EA; to prepare written responses to comments on the Draft EA as required by CARB's certified regulations at

California Code of Regulations, title 17, sections 60000-60007, and Government Code section 11346.9(a); and to present to the Board, at a subsequently scheduled public hearing, staff's written responses to any comments on the Draft EA, along with the Final EA, for consideration for approval, and the finalized regulations and the amendments for consideration for adoption;

WHEREAS, following the Board hearing, the modified regulatory language and supporting documentation were circulated for a 15-day public comment period, with the changes to the originally proposed text clearly indicated, according to the provisions of Government Code, section 11340.85, and California Code of Regulations, title 1, section 44, from November 9, 2018 through November 26, 2018;

WHEREAS, staff reviewed written comments received on the Draft EA and prepared written responses to those comments in a document entitled *Response to Comments on the Environmental Analysis Prepared for the Innovative Clean Transit Regulation* (Response to EA Comments);

WHEREAS, staff posted on the rulemaking page the Final EA, which includes minor revisions, and the Response to EA comments, on December 7, 2018, and December 4, 2018, respectively;

WHEREAS, prior to the duly noticed public hearing held on December 14, 2018, staff presented the Final EA and the Response to EA Comments, as set forth in Attachments B and C to this resolution, to the Board for consideration;

WHEREAS, a public hearing and other administrative proceedings have been held according to the provisions of Chapter 3.5, part 1, division 3, title 2, commencing with section 11340, of the Government Code; and

WHEREAS, in consideration of the evidence before the Board, including the ISOR, written comments, and public testimony, the Board finds that:

A new approach for requiring transit agencies to purchase zero-emission buses than stated in the current Fleet Rule for Transit Agencies is appropriate;

California is home to zero-emission bus manufacturing, and to date, many of the zero-emission buses sold in the United States are operated and manufactured in California, thereby creating high-quality jobs;

The Innovative Clean Transit regulation contains elements to ensure a successful and orderly transition to a zero-emission transit fleet;

The Innovative Clean Transit regulation is a necessary program for meeting the State's goals and requirements to reduce greenhouse gas, criteria pollutant, and toxic air containment emissions;

The Innovative Clean Transit regulation promotes fuel efficiency improvements and utilization of renewable energy sources;

The Innovative Clean Transit regulation will not have a significant statewide adverse economic impact that would directly affect businesses, including the ability of California businesses to compete with businesses in other states, or on represented private persons;

No alternative considered to date, or that has otherwise been identified and brought to the attention of the Board, would be more effective in carrying out the purpose for which the Innovative Clean Transit regulation is proposed, would be as effective and less burdensome to affected private persons than the proposed regulation, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provision of law of the proposed regulation, upon considering, among other things, the standardized regulatory impact analysis of the proposed regulation and the specific benefits of the proposed regulation that were identified in the Notice of this action;

The proposed Innovative Clean Transit regulation is consistent with the Board's environmental justice policies and does not disproportionately impact people of any race, culture, or income.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby certifies that the Final EA, set forth in Attachment B to this resolution, was completed in compliance with CARB's certified regulatory program to meet the requirements of CEQA, reflects the agency's independent judgment and analysis, and was presented to the Board whose members reviewed and considered the information therein before taking action to approve the regulations and the amendments.

BE IT FURTHER RESOLVED that the Board approves the Response to EA Comments set forth in Attachment C to this resolution.

BE IT FURTHER RESOLVED that in consideration of the Final EA, the Response to EA Comments, and the entirety of the record, the Board adopts the Findings and Statement of Overriding Considerations, set forth in Attachment D to this resolution.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby adopts the regulations and the amendments to sections 2023, 2023.1, 2023.2, 2023.3, 2023.4, 2023.5, 2023.6, 2023.7, 2023.8, 2023.9, 2023.10, and 2023.11, title 13, California Code of Regulations, as set forth in Appendix A.

BE IT FURTHER RESOLVED that the adopted regulatory text may be further revised with grammatical or other non-substantial changes, which will be added to the rulemaking record and indicated as such.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to determine if additional conforming modifications to the regulation are appropriate, and that if no additional modifications are appropriate, the Executive Officer shall take final action to adopt the regulations, as set forth in Appendix A. If the Executive Officer determines that additional conforming substantial modifications are appropriate, the modified regulatory language shall be made available for public comment, with any additional supporting documents and information, for at least 15 days. The Executive Officer may present the regulation to the Board for further consideration if warranted, and if not, the Executive Officer shall take final action to adopt the regulation with substantial and non-substantial modifications.

BE IT FURTHER RESOLVED that the Board hereby determines, pursuant to section 209 of the Federal Clean Air Act, that the requirements related to the control of emissions adopted as part of the amendments to the regulations adopted herein are, in the aggregate, at least as protective of public health and welfare as applicable federal standards, that California needs the adopted standards to meet compelling and extraordinary conditions of high concentrations of people and motor vehicles, vulnerability to climate change, and the geographic and climate conditions of the state, and that the adopted requirements are consistent with the provisions of sections 202(a) of the Clean Air Act.

BE IT FURTHER RESOLVED that if there is a possibility that any further modifications to the regulation may affect the conclusion of the environmental analysis, the Executive Officer shall prepare and circulate any additional environmental analysis to the extent required by the Board's regulations at California Code of Regulations, title 17, sections 60000-60007, and prepare written responses to any comments received raising significant environmental issues as necessary, to present to the Board for approval along with the final regulation.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to utilize the exemption criteria provided in the regulation to ensure there are no adverse impacts to transit service; consult with transit agencies to resolve their concerns; and report back to the Board annually on progress and suggest any adjustments that may be warranted.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to provide the Board with a comprehensive review of program readiness at least one year prior to the initiation of any zero-emission bus purchase requirements under the Innovative Clean Transit Regulation. The review would be presented to the Board on or before January 1, 2022, if the threshold specified in the initial discharge of the zero-emission bus purchase requirements of section 2023.1(b)(1) is not met. The review would be presented to the Board on or before January 1, 2023 if the threshold specified in section 2023.1(b)(1) is met and the threshold of section 2023.1(b)(2) is not met. The review would be presented to the Board on or before January 1, 2024 if the threshold specified in section 2023.1(b)(1) and (2) are met. At a minimum, the review will address the following issues:

(a) costs, California incentive funding programs, performance, reliability of zero-

emission buses; (b) associated infrastructure necessary to operate and maintain zeroemission buses; (c) the extent of the creation of jobs and training programs for employment in manufacturing, maintaining, and operating zero-emission bus technologies; (d) the deployment status of zero-emission buses and related technologies; and (e) the availability and barriers to deployment of zero-emission buses in the various categories. This review is intended to help the State improve policies to advance heavy-duty zero-emission technologies, and inform funding strategies related to zero-emission vehicles, buses, and infrastructure, while ensuring transit service or fares are not adversely impacted by the transition.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to report to the Board annually on the implementation status of the Innovative Clean Transit regulation. This report will address the status of the development and deployment of zero-emission bus technologies, status of California incentive funding program, CARB's collaboration with transit agencies, manufacturers, infrastructure providers, and other state agencies to promote zero-emission bus technologies, and any potential changes to the regulatory requirements that may be warranted.

BE IT FURTHER RESOLVED that CARB recognizes the importance of identifying and committing additional resources to addressing indirect costs associated with the Innovative Clean Transit Regulation, including, but not limited to, workforce development and training. CARB recognizes that state investment that supports California workers can expand the benefits of the regulation, and deliver much-needed jobs training and employment opportunities to communities across the state. For that reason, CARB is committed to working with the transit community and our sister state agencies, such as the California Workforce Development Board and Employment Development Department, to invest in workforce development and training in the operation and maintenance of zero-emission heavy-duty vehicle technologies. CARB staff's efforts in this area will seek to leverage, to the maximum extent possible, existing and scalable curriculums already utilized by early adopters of zero-emission buses.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to finalize the Final Statement of Reasons, submit the completed rulemaking package to the Office of Administrative Law, and transmit the Notice of Decision with the Response to EA Comments to the Secretary of the Natural Resources Agency for posting.

> I hereby certify that the above is a true and correct copy of Resolution 18-60 as adopted by the California Air Resources Board.

Cristina Granados, Clerk of the Board

Resolution 18-60

December 14, 2018

Identification of Attachments to the Board Resolution

- Attachment A*: Final Regulation Order for the Innovative Clean Transit Regulation, A Replacement of the Fleet Rule for Transit Agencies sections 2023, 2023.1, 2023.2, 2023.3, 2023.4, and Adoption of new sections 2023.5, 2023.6, 2023.7, 2023.8, 2023.9, 2023.10, and 2023.11, Title 13, California Code of Regulations, released to the public at the December 14, 2018, CARB hearing.
- Attachment B*: Final Environmental Analysis Prepared for the Innovative Clean Transit Regulation, A Replacement to the Fleet Rule for Transit Agencies, released to the public December 7, 2018.
- Attachment C*: Response to Comments on the Environmental Analysis Prepared for Innovative Clean Transit Regulation, A Replacement to the Fleet Rule for Transit Agencies, released to the public December 4, 2018.
- **Attachment D*:** Findings and Statement of Overriding Considerations, released to the public at the December 14, 2018, CARB hearing.

*Attachments A, B, C, & D are <u>NOT</u> attached to the proposed resolution; they are simply described on this page.